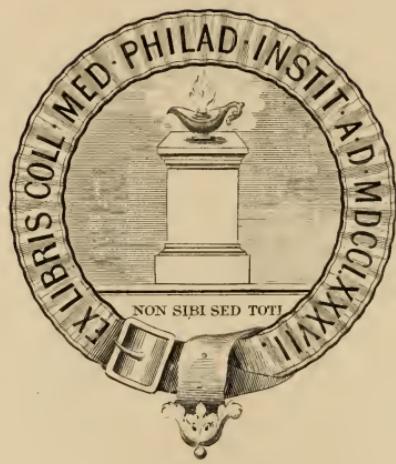
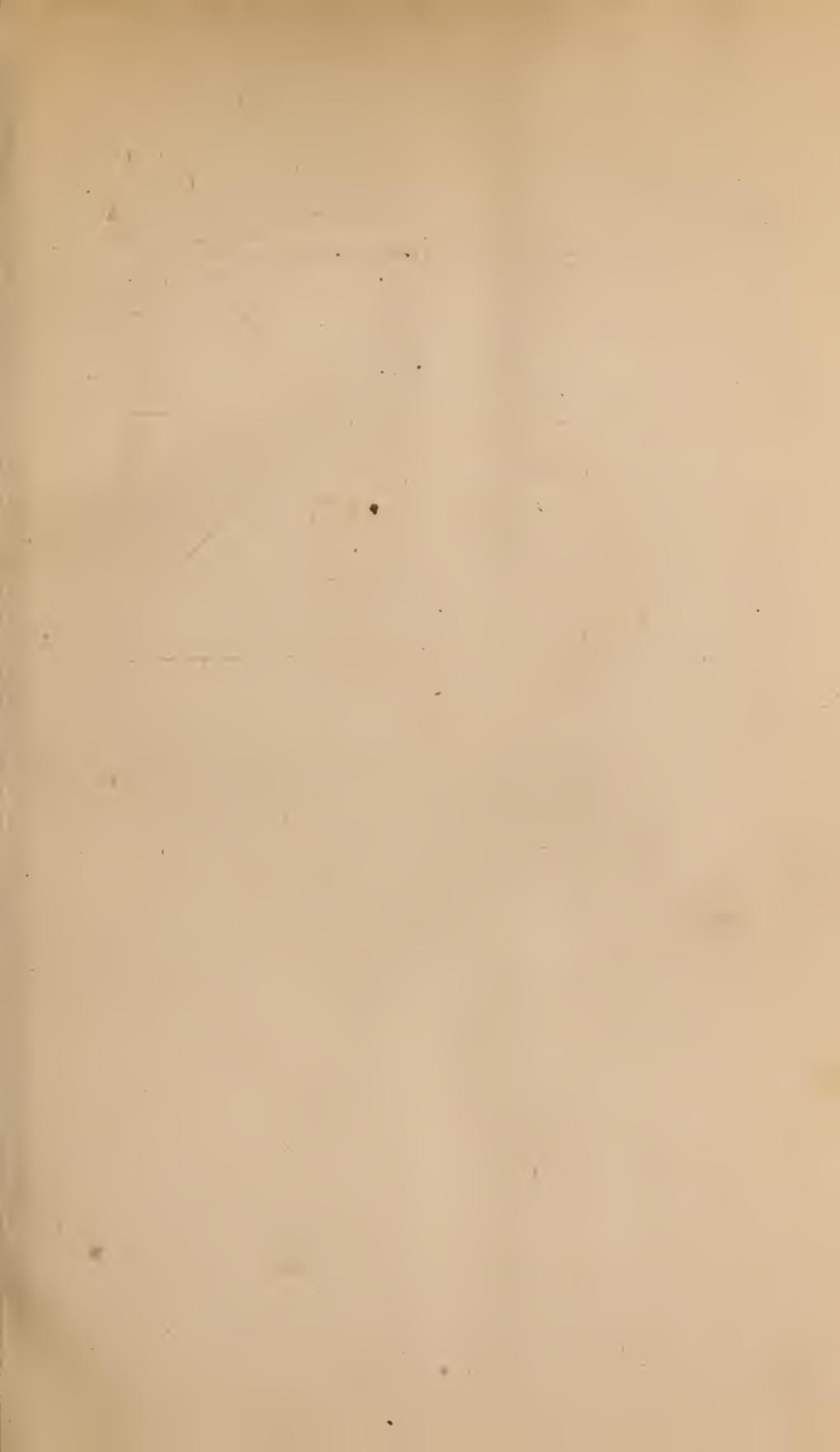




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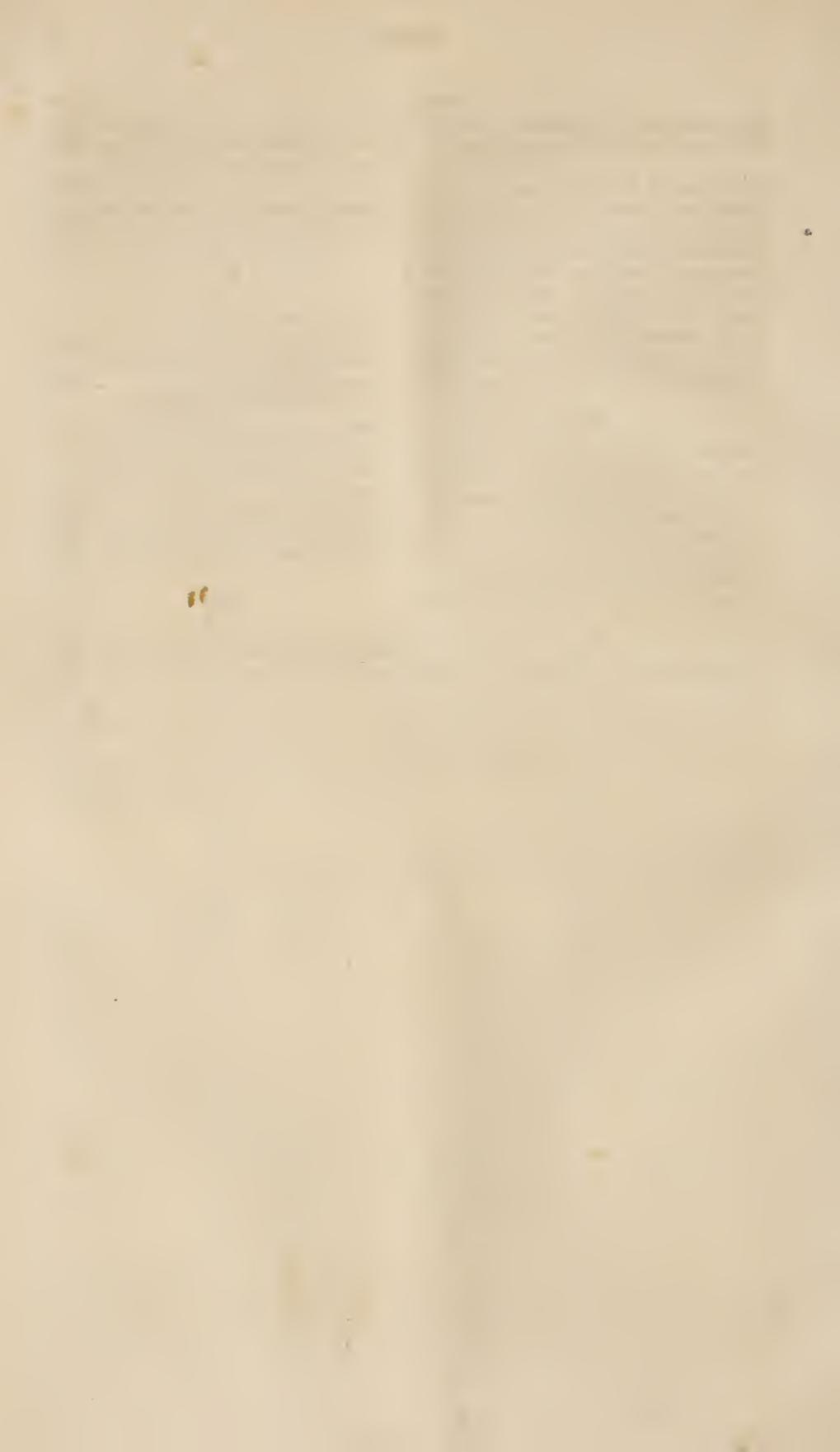
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# O H I O

## MEDICAL AND SURGICAL JOURNAL.

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### Original Communications.

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*General Views on Archæology.* By A. MORLOT, of Lausanne, Switzerland. Translated by PHILIP HARRY, Esq., for the Smithsonian Institution.

A century has scarcely elapsed since the time when it would have been thought impossible to reconstruct the history of our globe prior to the appearance of mankind; but though contemporary historians were wanting during this immense pre-human era, this era has not failed to leave us a well-arranged series of most significant vestiges. The animal and vegetable tribes which have successively appeared and disappeared have left their fossil remains in the successively deposited strata. Thus has been composed, gradually and slowly, a history of creation, written, as it were, by the Creator himself. It is a great book, the leaves of which are the stratified rocks, following each other in the strictest chronological order, the chapters being the mountain-chains. This great book has long been closed to man; but science, constantly extending its realm and improving its method of induction, has taught the geologist to study those marvelous archives of creation, and we behold him now unfolding the past ages of our world with a variety of details and a certainty of conclusions well calculated to inspire us with grateful admiration.

The development of Archæology has been very similar to that

of Geology. Not long ago we should have smiled at the idea of reconstructing the bygone days of our race previous to the beginning of history properly so called. The void was partly filled up by representing that ante-historical antiquity as having been only of short duration, and partly by exaggerating the value and the age of those vague and confused notions which constitute tradition.

It seems to be with mankind at large as with single individuals. The recollections of our earliest childhood have entirely faded away up to some particular event which had struck us more forcibly, and which alone has left a lasting image amidst the surrounding darkness. Thus, excepting the idea of a deluge which exists among so many nations, and therefore appears to have originated before the emigration of those same nations, the infancy of mankind, at least in Europe, has passed without having any reminiscences; and history fails here entirely, for what is history but the memory of mankind?

But before the beginning of history there were life and industry, of which various monuments still exist; while others lie buried in the soil, much as we find the organic remains of former creations entombed in the strata composing the crust of the globe. The antiquities enact here a similar part to that of the fossils; and if Cuvier calls the geologist an antiquarian of a new order, we can reverse that remarkable saying, and consider the antiquarian as a geologist, applying his method to reconstruct the first ages of mankind previous to all recollection, and to work out what may be termed pre-historical history. This is ARCHÆOLOGY pure and proper. But Archaeology cannot be considered as coming to a full stop with the first beginning of history, for the further we go back in our historical researches, the more incomplete they become, leaving gaps which the study of material remains helps to fill up. Archaeology, therefore, pursues its course in a parallel line with that of history, and henceforth the two sciences mutually enlighten each other. But with the progress of history the part taken by Archaeology goes on decreasing, until the invention of printing almost brings to a close the researches of the antiquarian.

To pursue geological investigations, we must first examine the present state of our planet, and observe its changes—that is, we must begin by physical geology. This supplies us with a thread of induction to guide us safely in our rambles through the past ages of our earth, as Lyell has so admirably set forth; for the laws which govern organic creation and the inorganic world are as invariable as the results of their combinations and permutations are infinitely varied, science revealing to us everywhere the perfect stability of causes with the diversity of forms.

So, to understand the past ages of our species, we must first begin by examining its present state, following man wherever he has crossed the waters and set his foot upon dry land. The different nations which at present inhabit our earth must be studied with respect to their industry, their habits, and their general mode of life. We thus make ourselves acquainted with the different degrees of civilization, ranging from the highest summit of modern development to the most abject state, hardly surpassing that of the brute. By that means Ethnology supplies us with what may be called a contemporaneous scale of development, the stages of which are more or less fixed and invariable; whilst Archaeology traces a scale of successive development, with one movable stage passing gradually along the whole line.\*

Ethnography is, consequently, to Archaeology what physical geography is to geology, namely: a thread of induction in the labyrinth of the past, and a starting point in those comparative researches of which the end is the knowledge of mankind, and its development through successive generations.

In following out the principles above laid down, the Scandinavian *savants* have succeeded in unraveling the leading features in the progress of pre-historical European civilization, and in dis-

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\* Some naturalists see a correspondence of the same sort between embryology and comparative anatomy, for they consider the human embryo as passing during its development through the different stages of animal creation, or, at least, as passing through the different states of the embryos of the different stages of that scale.

tinguishing three principal eras, which they have called the STONE-AGE, the BRONZE-AGE, and the IRON-AGE.\*

This great conquest in the realm of science is due chiefly to the labors of Mr. Thomsen, director of the Ethnological and Arcæological Museums at Copenhagen,† and to those of Mr. Nilsson, professor at the flourishing University of Lund, in Sweden.‡ These illustrious veterans of the school of northern antiquarians have ascertained that Europe, at present so civilized, was at first inhabited by tribes to whom the use of metal was totally unknown, and whose industry and domestic habits must have borne a considerable analogy to what we now see practiced among certain savages. Bone, horn, and chiefly flint, were then used, instead of metal, for manufacturing cutting-instruments and arms. This was the STONE-AGE, which might also be called the first great phase of civilization.

The earliest settlers in Europe apparently brought with them the art of producing fire. By striking iron-pyrites (sulphuret of iron) against quartz, fire can be easily obtained. But this method can only have been occasionally used, and seems to have been confined to some native tribes in Terra del Fuego.§ The usual mode has been evidently that of rubbing two sticks together; but, on further reflection, it is easy to perceive that this was a most difficult discovery, and must at all events have been preceded by a knowledge of the use of fire as derived from the effects of lightning or from volcanic action.

The Stone-age was, therefore, probably preceded by a period perhaps of some length, during which man was unacquainted with

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\* The history of Danish Archæology has been sketched by T. Hindenburg. (See "Dansk Maanedsskrift," I. 1859.)

† "Ledetraad til nordisk Oldkyndighed." Copenhagen, 1836. Published in English by Lord Ellesmere, under the title of "A Guide to Northern Antiquities." London, 1848.

‡ Nilsson. "Scandinaviska nordens urinvonare." Lund, 1838—1843.

§ Weddell, "A Voyage towards the South Pole in 1822, 1824." London, 1827. P. 167.

the art of producing fire. This, according to Mr. Flourens, indicates that the cradle of mankind was situated in a warm climate.\*

The art of producing fire has been perhaps the greatest achievement of human intelligence. The use of fire lies at the root of almost every species of industry; it enables the savage to fell trees, as it allows civilized nations to work metals. The importance is so great, that, deprived of it, man would perhaps scarcely have risen above the condition of the brute. The ancients were already sensible of this. Witness the fable of "Prometheus." As to their sacred perpetual fire, its origin seems to lie in the difficulty of procuring it, thereby rendering its preservation essential.

In Europe the Stone-age came to an end by the introduction of bronze. This metal is an alloy of about nine parts of copper and one part of tin.† It melts and moulds well; the molten mass, in cooling, slowly acquires a tolerable degree of hardness—inferior to that of steel, it is true, but superior to that of very pure iron. We therefore understand how bronze would long be used for manufacturing cutting-instruments, weapons, and numerous personal ornaments. The northern antiquarians have very properly called this second great phase in the development of European civilization the BRONZE-AGE.

The bronze articles of this period, with a few trifling exceptions,

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\* Flouren's "De la Longevité Humaine." Paris, 1855. P. 127. Man, from the construction of his teeth, his stomach, and his intestines, is primitively frugivorous, like the monkey. But the frugivorous diet is the most unfavorable, because it constrains its followers perpetually to abide in those countries which produce fruit at all seasons, consequently in warm climates. But, once the art of cooking introduced, and applied both to animal and vegetable productions, man could extend and vary the nature of his diet. Man has, consequently, two diets: the first is primitive, natural, and instinctive, and by it he is frugivorous; the second is artificial, being due entirely to his intelligence, and by this he is omnivorous.

† Bronze is still used for casting bells, cannon, and certain parts of machinery. It must not be confounded with common brass, which is a compound of copper and zinc, much less hard, and appearing only in the Iron-age.

have not been produced by hammering, but have been cast, often with a considerable degree of skill. Even the sword-blades were cast, and the hammer (of stone) was only used to impart a greater degree of hardness to the edge of the weapon.

The Bronze-age has, therefore, witnessed a mining industry which was completely wanting during the Stone-age. Now the art of mining is so essential to civilization, that without it the world would perhaps yet be exclusively inhabited by savages. It is, therefore, worth our while to inquire more closely into the origin of bronze.

Copper was not very difficult to obtain. In the first place, virgin copper is not exceedingly scarce. Then the different kinds of ore which contain copper, combined with other elements, are either highly colored, or present a marked metallic appearance, and are consequently easily known; they are, besides, not hard to smelt, so as to separate the metal. Finally, copper-ore is not at all scarce; it is met with in the older geological series of most countries.

Virgin tin is unknown, but tin-ore exists, of a dark color, and very easy to smelt. However abundant copper may be, tin is of rare occurrence. Thus the only mines in Europe which produce tin at the present day are of Cornwall, in England, and of the Erzgebirge and Fichtelgebirge, in Germany.

But the question arises whether, previous to the discovery of bronze, man, owing to the great rarity of tin, may not have begun by using copper in a pure state. If so, there would have been a copper-age between the stone and bronze-ages.

In America this has really been the case. When they were discovered by the Spaniards, both the two centres of civilization, Mexico and Peru, had bronze composed of copper and tin, which was used for manufacturing arms and cutting-instruments, in the absence of iron and steel, which were unknown in the New World; but the admirable researches of Messrs. Squier and Davis on the antiquities of the Mississippi valley\* have brought to light an

\* Squier and Davis. "Ancient Monuments of the Mississippi Valley." Smithsonian Contributions to Knowledge. Washington, 1848. It is one of the most splendid archaeological works ever published.

ancient civilization of a remarkable nature, and distinguished by the use of raw virgin copper, worked in a cold state by hammering without the aid of fire. The reason of its being so worked lies in the nature of pure copper, which, when melted, flows sluggishly, and is not very fit for casting. A peculiar characteristic of the metal, that of occasionally containing crystals of virgin silver, betrays its origin, and shows that it was brought from the neighborhood of Lake Superior. This region is still rich in metallic copper, of which single blocks attaining a weight of fifty tons have lately been discovered. There was even found at the bottom of an old mine a great mass of copper, which the ancients had evidently been unable to raise, and which they had abandoned, after having cut off the projecting parts with stone hatchets.\*

The date of this American age is unknown; all we know is that it must reach as far back as ten centuries at least, that space of time being deemed necessary for the growth of the virgin forests, now flourishing upon the remains of that antique civilization of which the modern Indians have not even retained a tradition.

It is finally worthy of remark that the "monnd-builders," as the Americans call the race of the Copper-age, seem to have preceded and prepared the Mexican civilization, destroyed by the Spaniards; for in progressing southwards, a gradual transition is noticed from the ancient earth-works of the Mississippi valley to the more modern constructions of Mexico, as found by Cortez.

In Europe the remains of a copper-age are wanting. Here and there a solitary hatchet of pure copper is found; but this can easily be accounted for by the greater frequency of copper, while tin had usually to be brought from a greater distance, so that its supply was more precarious.

Europe did not witness the regular development of a copper-age. It seems, according to M. Worsaac's very just remark, that the art of manufacturing bronze was brought from another quarter of the world, where it had been previously invented. It was most

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\* Lapham. "The Antiquities of Wisconsin." *Smithsonian Contributions to Knowledge*, p. 76, 1855.

probably some region in Asia, producing both copper and tin, where these two metals were first brought into artificial communication, and where also traces of a still earlier copper-age are likely to be found.

An apparently serious objection might be started here, by raising the question how mines could be worked without the aid of steel. This, however, is sufficiently explained by the fact that the hardest rocks can be easily managed by the agency of fire. By lighting a large fire against a rock, the latter is rent and fissured, so as to facilitate considerably its quarrying. This method was frequently employed when wood was cheaper, and is even practiced in the present day in the mines of the Rammelsberg, in Germany, where it facilitates the working of a rock of extreme hardness.

That metal of dingy and sorry appearance, but more precious than gold or the diamond—iron—at length appears, giving a wonderful impulse to the progressive march of mankind, and characterizing the third great phase in the development of European civilization, very properly called the IRON-AGE.

Our planet never yields iron in its metallic or virgin state, for the simple reason that it is too liable to oxydation. But among the ærolites there are some composed of pure iron, with a little nickel, which alters neither the appearance nor the qualities of the metal. Thus the celebrated meteoric stone met with by Pallas in Siberia was found by the neighboring blacksmiths to be malleable in a cold state.\* Meteoric iron has even been worked by tribes to whom the use of common iron was unknown. Thus Amerigo Vespucci speaks of savages near the mouth of the La Plata, who had manufactured arrow-heads of iron derived from an ærolite.† Such cases are certainly of rare occurrence, but they are not without their importance, for they explain how man may probably have first become acquainted with iron, and they also account for the

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\* Pallas. "Voyages en Russie," Paris, 1793, vol. iv. p. 595. There was but one mass of meteoric iron; it weighed 1,600 lbs.

† "Smithsonian Contributions to Knowledge," vol. ii. art. 8, p. 178.

occasional traces of iron in tombs of the Stone-age, if, indeed, this fact be well established.

It is, notwithstanding, evident that the regular working of terrestrial iron-ore must have been a necessary condition of the commencement and progress of the Iron-age.

Now iron-ore is generally found in most countries, but it has usually the appearance of stone, being distinguished neither by its weight nor color. Moreover, its smelting requires a much greater degree of heat than copper or tin, and this renders its production considerably more difficult than that of bronze.

But even when iron had been obtained, what groping in the dark, and how much laboriously accumulated experience did it not require, to bring forth at will bar-iron or steel! Chance, if chance there be, may have played a part in it; but as chance only favors those privileged mortals who combine a keen spirit of observation with serious meditation and with practical sense, the discovery was not less difficult nor less meritorious. We need not, then, be surprised if man arrived but tardily at the manufacture of iron and steel, which is still daily being improved.

In Carinthia traces of a most primitive method of producing iron have been noticed. The process seems to have been as follows: On the declivity of a hill an excavation was dug, in which was lighted a large fire. When this began to subside, fragments of very pure ore (hydroxyd) were thrown into it, and covered by a new heap of wood. When all the fuel had been consumed, small lumps of iron would then be found among the ashes.\* All blowing apparatus was in this manner dispensed with—an important fact when we come to consider how much its use complicates the metallurgical operations, because it implies the application of mechanics. Thus, certain tribes in southern Africa, although manufacturing iron and working it tolerably well, have not achieved the construction of our common kitchen-bellows, apparently so simple; they blow laboriously through a tube, or by means of a bladder affixed to it.

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\* Communicated to the author by mining-engineers in Carinthia.

The Romans produced iron by the so-called Catalonian process, and the remains of Roman works of that description have been discovered and investigated in Upper Carniola, Austria.\* The Catalonian forge is still used in the Pyrenees, where it yields tolerable results; but it consumes a large quantity of charcoal, requires much wind, and is only to be applied to pure ore containing but a very small proportion of earthy matter, producing scoriae. The process, in fact, consists in a mere reduction, with a soldering and welding together of the reduced particles, without the metal properly melting. According to the manner in which the operation is conducted, bar-iron or steel are obtained at will. This direct method dispenses with the intermediate production of cast-iron, which was unknown to the ancients, and which is now the means of producing iron on a great scale.

Silver accompanied the introduction of iron into Europe—at least, in the northern parts; whilst gold was already known during the bronze-age. This is natural, for gold is generally found as a pure metal, while silver has usually to be extracted from different kinds of ore, by more or less complicated metallurgical operations—for example, cupellation.

With iron appeared also, for the first time in Europe, glass, coined money—that powerful agent of commerce—and finally the alphabet, which, as the money of intelligence, vastly increases the activity and circulation of thought,† and is sufficient of itself to characterize a new and wonderful era of progress. From thence we can date the dawn of history and of science, in particular of astronomy.

The fine arts presented, with the introduction of iron in Europe, a new and important element indicating a striking advance. During

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\* *Jahrbuch der K. K. geologischen Reichsanstalt.* Vienna, 1850, vol. ii. p. 199. Carinthia and Upper Carniola formed part of the Roman province Noricum, celebrated for its iron.

† “The circulation of ideas is for the mind what the circulation of specie is for commerce—a true source of wealth.” C. V. de Bonstetten. “*L’homme du midi et l’homme du Nord.*” Geneva, 1826, p. 175.

the stone-age, but more so in the bronze-age, the natural taste for art reveals itself in the ornaments bestowed upon pottery and metallic objects. These ornaments consist of chevrons, circles, and zig-zag, spiral, and S-shaped lines, the style bearing a geometrical character, but showing pure taste and real beauty of its kind, although devoid of all delineations of animated objects, either in the shape of plants or animals. It is only with the Iron-age that art, taking a higher range, rose to the representation of plants, animals, and even of the human frame. No wonder, then, if idols of the Bronze-age as well as of the Stone-age are wanting in Europe. It is to be presumed that the worship of fire, of the sun, and of the moon, was prevalent in remote antiquity—at least during the Bronze-age, perhaps also during the Stone-age.

The preceding pages present a sketch, certainly very rough and imperfect, of the developments of civilization. They establish, however, in a very striking manner, the fact of a progress, slow, but uninterrupted and immense, when the starting point is considered. The physical constitution of man has naturally benefited by it. The details contained in the treatise of which the present paper forms the introduction, prove that the human race has been gradually gaining in vigor and strength since the remotest antiquity.\* The domestic animals also—the dog first, then the horse, the ox, and the sheep have shared in this physical development. Even the vegetable soil has been gradually improving since the Stone-age—at least in Denmark. And yet there are persons who deny all general progress, seeing every where nothing but decay and ruin, like that worthy specimen of a northern pessimist who exclaimed, “See how man has degenerated; he has even lost his likeness to the monkey!”

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\* This agrees perfectly with the testimony of statistics. (See “Quetelet sur l'hnme et le developement de ses facultes.” Paris, 1835, vol. ii. p. 271.) This work of first-rate merit is very near akin to Archaeology. M. Quetelet has just published a new work, which will certainly be even more remarkable than the first, and which the author of the present paper regrets not to have had within his reach.

## I. KJOEKKENMOEDDING.

GENERAL VIEW.—On certain points of the Danish shore there are found heaps, some times enormous, of marine shells, which were at first taken to be natural deposits, indicating an ancient level of the sea higher than at present, or, to speak more correctly, a level of the dry land lower than the present one.

But in the natural deposits along the coast we observe an assemblage of individuals of all ages, young and old, belonging to the littoral mollusk fauna, whilst here the younger are wanting, and we discover merely adult individuals belonging to a small number of species, which have not all even the same habitat, as the oyster and the littorine, and could not therefore be met naturally in each other's company. Neither is the arrangement of the materials conformable to what is observed in natural deposits, where there is always more or less stratification and sorting, according to the volume and weight.

On examining more closely these heaps of shells, it was not long before there were discovered in them broken bones of various wild animals, and among these the bones of some species now extinct; then there were splinters of silex (flint or quartz), with roughly fashioned instruments of the same material, very coarse pottery, charcoal, and cinders.

At the same time most extensive excavations and most minute investigations established the fact that there was in these heaps a complete absence of any metal, whether iron or even bronze, as well as of any kind of domestic animal, except the dog. Here was then unmistakably the refuse of repasts, lying confusedly mingled with the remnants of the primitive mechanical inventions of a people that had resorted to the sea-shore in the most remote antiquity, living on fish and game. These remnants and refuse, accumulated in one spot\* during a long series of centuries, have

\* Sea shell-fish supply an enormous quantity of refuse, for the very simple reason that the animals are small and their casing is solid and spacious.

been called by the Danes KJOEKKENMOEDDING, from *Kjoekken* kitchien and *Moedding*\* refuse, rubbish, filth.

The *Kjoekkenmoedding*† are invested with peculiar interest, because their nature excludes the presence of any object of a posterior date. Unless the soil should have been disturbed subsequently, which is always easily ascertainable, and which, on many spots that are now very distant from habitations, never has happened, we are sure that all that is drawn from these deposits does most certainly belong to high antiquity, and has not been brought there at a later time. The *Kjoekkenmoedding* are therefore real zoölogical museums of the animal kingdom, of the fauna, which man found on arriving in the country, and they thus form a link which binds the geological past of our globe with the present historical period. It is for this reason that the Danish savans have, for the last ten years, since 1847, set themselves to investigate the deposits in question with a spirit of research that does them the greatest honor, and which has not failed to lead to results of singular interest. And yet the subject in itself might appear to be somewhat trifling to those who do not consider that every thing in this world is susceptible of being dignified by true genius.

In order that the question might be mastered under every aspect, it was attacked by the united forces of an association very fortunately composed of Mr. Forchhammer, the father of the geology of Denmark, of Mr. Worsaae, one of the greatest archeological celebrities of the north, and of Mr. Steenstrup, a zoologist and botanist, well known to all those who take an interest in the great and curious question of alternating generation and in the no less important one of the formation of turf-bogs.

These gentlemen, all of them professors in the University of

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\* This term is found in Yorkshire, England, under the form of *midding*, and with exactly the same meaning.

† The plural in Danish is *Kjoekkenmoeddinger*. We have retained the singular. In the present memoir all the foreign terms are preserved without alteration in the singular number.

Copenhagen, have published six annual reports of their researches (from 1850 to 1856), addressed to the Academy of Sciences of Copenhagen, and signed collectively by all three. They have also gathered little by little a collection which contains, among other things, some ten thousand specimens of bones, each of which is labeled according to where it was found; this having been determined most carefully. Finally, with a select portion of these materials they have formed in the Museum of Antiquities of the North the admirable creation of Mr. Thomsen, a representation of the *Kjoekkenmoedding*, interesting on account of its size and the judgment with which it has been arranged.

Let us now enter upon the details of their researches:

GEOGRAPHICAL DISTRIBUTION.—The *Kjoekkenmoedding* have been observed in Seeland, especially along the Isefjord, in the isle of Fyen, of Moen, and Samsoe; also in Jutland, along the Liimfjord, the Mariagerfjord, the Randersfjord, the Kolindsund, and the Horsenfjord. The more southern regions of Denmark have not yet been explored.

The *Kjoekkenmoedding* are scarcely found anywhere but along the fjords and arms of the sea, in places where the action of the waves has little power. Along the shore of the open sea, where the waves waste away, and little by little encroach upon the banks, there are none found. Now, as they must necessarily have also existed there, we may conclude therefore that in such localities there must have been a general encroachment of the sea on the land. There would be nothing surprising in this, for Denmark being composed in great part of very movable ground, which is but slightly elevated above the level of the sea, the action of the waves washes it away and easily eats into the shores.

Ordinarily the *Kjoekkenmoedding* are situated immediately on the edge of the water. At certain points, however, they are met with at as great a distance as two geographical miles from the present shore, but in such cases it can be proved that the dry land

has made an inroad on the sea, either by sand and mud banks, or by the encroachment of turf formations. The shells have never been carried inland to any distance from the ancient shore line.

As regards the elevation at which the *Kjoekkenmoedding* are situated, it is to be remarked that on the shores of Denmark, although so low, they are nevertheless found out of reach of the action of the waves in rough weather; say at some ten feet at least above the present level of the sea.\* When the shore is higher the *Kjoekkenmoedding* are found also at a greater elevation.

It is evident that deposits corresponding to the *Kjoekkenmoedding* will be found in a great many countries. Thus, M. Bruzelius, conservator of the Museum of Antiquities of Lund, has just found something similar on the coast of Sweden, near Kullaberg, in Scania.

M. Forel de Morges has discovered on the edge of the sea, near Mentona (Gulf of Genoa), certain caves with deposits containing quantities of shells of edible species, broken bones of animals, charcoal, and splinters of flint, fashioned precisely like those in the north.† Here, then, are *Kjoekkenmoedding* of the age of stone, just as in the north.‡ This discovery is all the more interesting from the fact that it has been some times denied that the south had its age of stone, because the Greek and Roman classic writers do not speak of it. As if a child could relate what had happened previous to its birth!

Lastly, Lyell, Darwin, and others have pointed out deposits of

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\* A Danish foot is 0.31376 metres.

† The grottoes and caverns have usually been inhabited in high antiquity. They therefore deserve special attention from archaeologists.

‡ Mr. Steenstrup, who has examined the collection deposited by Mr. Forel in the Museum of Turin, finds this correspondence complete, only he has not been able to find any marks of knives on the bones, which are however split and opened for the extraction of the marrow, as in the north.

this kind, due to the habits of savage tribes on the shores of North America, on the coast of Newfoundland, and elsewhere.\*

CONFORMATION.—The *Kjockkenmoedding* present generally a thickness of from three to five feet. There are, however, points, as at Meilgaard and at Kolindsund, where the thickness of the mass attains ten feet. Their extent varies; it reaches sometimes to a thousand feet in length, with an irregular width, never exceeding from one hundred and fifty to two hundred feet. In the case of these great deposits we perceive that their surface is undulating, the mass having accumulated more at certain points than at others. Occasionally, as at the mill of Havelse, near Frederikssund, the deposit surrounds irregularly a space which has remained free and wherein was evidently situated the habitation of the shell-fish eaters. If no traces of these habitations have been left, it cannot be astonishing, for they must have been very wretched huts.

The interior of the deposits alluded to presents no sign of stratification. We remark merely at certain points the predominance of certain species of shells, indicating the particular circumstances of season and fishery. Thus there are found thousands of cockles (*Cardium*) piled up in one place, to the exclusion of every other species.

What has been said relates to the normal type of the *Kjockkenmoedding*, when the materials have been accumulated on the very locality of habitation. Apart from these points, others are found, situated on the shore and within the field of action of the waves, where the usual materials of the *Kjockkenmoedding* are mingled with sand and gravel, and where the whole mass is more or less clearly stratified, of which we may see a classical example at Biliat, near Frederikssund. It is evident that at these places the ancients cooked their meals on the very beach, after leaving their boats.

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\* Lyell. A second visit to the United States of America. London, 1850: I. 338; II. 106, 135. Charles Darwin, Journal of Researches. London, 1840; 228.

The various fragments which they left were subsequently rearranged by the next heavy sea, which rolled the materials about and mingled them with the composition of the coast deposits. We can understand then how the fire-places, composed of pebbles of the size of a man's fist, have resisted the action of the waves and have remained in their place, whilst the smaller materials have been rolled along with the sand and gravel.

A very singular circumstance is that the *Kjoekkenmoedding*, formed beyond the reach of the waves, present sometimes at their surface a deposit of slight thickness composed of rolled and stratified materials. But this is only observed up to a height of from fourteen to eighteen feet above the present level of the sea, and solely on the counter-slope of the ground turned towards the sea. At Oesterild, in northern Jutland, this stratified coating attains a thickness of one foot and contains pebbles that are occasionally as large as a goose-egg. Above this stratified layer nothing more is found, it is never covered over by new accumulations of shells. It would seem, then, that the age of the *Kjoekkenmoedding* was ended by some catastrophe which violently agitated the waters of the sea, and that the latter then rushed in at a moderate height beyond its habitual boundary.

It is just possible that this event might have occurred at any epoch posterior to the age of the *Kjoekkenmoedding*. Nevertheless Mr. Steenstrup is disposed to consider it as marking the very end of that age.

FLORA OF THE KJOEKKENMOEDDING.—Of the vegetable kingdom there is left but few determinable remains. Charcoal and ashes are found in abundance in them. The charred vegetable matters have been gathered together, in order to determine to what species they belong, but this investigation is not yet concluded.

It is worthy of notice that there has been found in the *Kjoekkenmoedding* neither carbonized wheat nor a trace of any cereal whatsoever.

There are observed sometimes, not so much in the mass itself of the *Kjøkkenmoedding* as in the soil adjoining them, deposits often-times rather considerable of a dark and pulverulent matter, resulting evidently from the carbonization of vegetable substances, which, however, were not wood, and which appear to have had their lye extracted. Chemical analysis revealed the existence of a large proportion of manganese in them, which, according to the researches of Mr. Forchhammer, is also found in pretty large quantities in the *eel-grass* (*Zostera marina*, L.) Now, it is scarcely two hundred years since the eel-grass was employed for making salt. This vegetable was gathered into heaps, which were set on fire, the remains were then sprinkled with sea-water, and on the surface were formed saline efflorescences, which were collected. The product was a salt that was tolerably good, and which people must have been very glad to obtain when there was no other to be had. It seems, then, that the primitive population of Denmark were in the habit of manufacturing salt by the incineration of the eel-grass.

FAUNA OF THE KJOEKKENMOEDDING.—The four species of shells, of which the greater part of the deposits in question are compounded, are :

- The Oyster (*Ostrea edulis*, L.)
- The Cockle (*Cardium edule*, L.)
- The Muscle (*Mytilus edulis*, L.)
- The Littorine (*Littorina littorea*, L.)

These four species, referred to here in the order of their frequency, are all represented by specimens generally large and of vigorous development. The oyster, which is the most abundant species in the *Kjøkkenmoedding*, and which often composes them almost entirely, has now disappeared from all the region situated farther in the interior than the Kattegat, and more southerly than the northern shore-line of Seeland. In the Kattegat itself we meet here and there with isolated living oysters. But there

is one point only, that between the island of Laesse and the northern extremity of Jutland, where an oyster bed has been regularly worked. It is from this that the city of Copenhagen is partly supplied. At the beginning of this century some oysters were procured at the entrance of the Isefjord, now they are no longer known in that locality,\* and, as a matter of course, none are to be found in the innermost parts of the Isefjord. And yet in ancient times oysters abounded there and even throughout its whole extent. The fishing business may have contributed to cause the decrease in the quantity of oysters, but it could never have made them disappear entirely. Besides, the presence in the Isefjord of beds of dead oysters *in situ* plainly proves that it is not the fishery that has destroyed them. Their disappearance in the localities alluded to must therefore be attributed to a diminution of the saltiness of the water, which must have become slightly fresher since the ancient times.

This observation is confirmed by what is remarked concerning the cockles and littorines. These two species are still found ordinarily living in the neighborhood of the *Kjoekkenmoedding*, in the inner part of the Kattegat; but they are at present smaller, and do not attain the vigorous development that they did in the old times in this vicinity.

The four species of shell-fish mentioned are all edible and are still used as food by mankind. They make their appearance, for example, in the London markets. The oyster is, however, by far the best; there is scarcely any other which is admitted to the table of the wealthy.

In addition to the four species referred, some others make their appearance, but only as exceptions, in the *Kjoekkenmoedding*, undoubtedly because as food they are very inferior in quality, and

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\* It is well however to remark, that at this point it was a great numerical increase of the star-fish (*Asterias rubens*, L.), which brought about at the commencement of the present century the destruction of the last generations of oysters.

also because they are less abundant in the Danish waters. They are :

*Buccinum reticulatum*, L.\*

*Buccinum undatum*, L.

*Venus palustra*, Mont.

As regards the *crustacea* there are but few remains of crabs found. The remains of fish, on the other hand, are in great quantity.

The herring (*Clupea harengus*, L.) is the most common, but the following species are not rare :

The Cod-fish (*Gadus callarias*, L.)

The Flounder (*Pleuronectes limanda*, L.)

The Eel (*Muraena anguilla*, L.)

The abundance of these remains of fish proves that the primitive population used to fish in the open sea. And yet their craft could scarcely have been any thing more than canoes, formed of trunks of trees scooped out by the aid of fire. One thing is certain, the shell-fish, especially the oysters, could only have been procured by fishing for them in boats, for the sea does not throw them up alive on the shore.

With reference to the eels, it is rather interesting to remark, that their ancient remains abound especially in the localities in which the species still delights at the present day, as in the neighborhood of Aalborg.

Among the birds, it is the aquatic and palustrine species that abound. We meet especially with several kinds of ducks and wild geese.

The presence of the wild swan (*Anas cygnus*) proves, that the *Kjøkkenmoedding* were also in process of formation during the winter, for it is only in winter that this bird makes its appearance in Denmark. On the approach of spring it returns to the more northern regions. It is then, especially, that is heard its harmo-

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\* *Buccium nassa*.

nious song, partaking of the sound of distant bells and of the eolian harp, whence, doubtless, the myth of its death chaunt.

The wood grouse (*Tetrao urogallus*, L.) is represented by large individuals of vigorous development. We see that the species thrrove in those countries; but as it feeds chiefly on pine buds, it follows, that in old times the sea-shore was clothed with pine forests, whilst now-a-days these trees no longer grow naturally in Denmark. We will revert again to this subject, when speaking of peat-bogs.

A species which it was very surprising to find in the *Kjockkenmoedding*, and which it was very difficult to identify, for the reason that museums contain only their skins stuffed with straw, without any skeleton, was the *Great Penguin*, of Buffon, (*Alca impennis*, L.) This bird, about the size of a goose, was totally incapable of flying, having nothing but the most diminutive apologies for wings or arms unfurnished with feathers suitable for flight. It frequented consequently only the small islands where there were no carnivorous animals. In the middle ages the great penguin was found in the islands near the coasts of Newfoundland and Cape Cod, in the United States, then in the islands near the southern shores of Iceland, in the Feroe islands, and at St. Kilda, to the west of the Hebrides. In old narratives and voyages to the Feroe islands we read, that the inhabitants of those regions were in the habit of eviscerating a penguin, thrusting a wick into the cavity of its stomach, setting fire to it, and letting this singular apparatus burn as if it were a lamp, so very fat and oily was the bird. On a little island near the coast of Newfoundland they burned these birds, for want of fuel, as if they were logs of wood, and in this way they cooked one individual by the help of his companion. The species was so abundant on the islands of the coast of America that navigators very frequently calculated upon them as a fresh supply when their provisions were exhausted in a long passage. Whole boat loads were frequently brought on board. It has, nevertheless, also happened, that certain ships' crews, not meeting with the

expected birds, have been driven to eat each other. This species, which was so numerous not very long ago, and of which we still possess a few stuffed specimens in museums, appears now to be completely destroyed and extinct, thanks to the omnivorous intervention of man. It was surmised that it might still be found on a small island to the southwest of Iceland; which is an almost inaccessible rock on account of the breakers. But an expedition that has just been undertaken by Mr. Woolley, to ascertain whether this was so, has not been able to find the lost bird. It is true that Temminck says in his great work on birds, and his words are often repeated by others, that the great penguin is common in Greenland; but the Danes, who are pretty well acquainted in that region, know nothing about it.\*

Our domestic fowl (*Gallus domesticus*) has not been found in the *Kjoekkenmoedding*. The well established absence of the two kinds of swallows, inhabiting now-a-days the constructions of men in Denmark, the chimney swallow (*Hirundo rustica*, L.) and the window swallow (*Hirundo urbica*, L.), and then again that of the sparrow (*Fringilla domestica*, L.) and the stork (*Ciconia alba*, Bel.), is nothing very surprising.

The quadrupeds, whose remains are most numerous, are :

The Deer (*Cervus elaphus*, L.)

The Roe-buck (*Cervus capreolus*, L.)

The Wild-boar (*Sus scrofa*, L.)

These three species are nowhere deficient; they constituted evidently the principal food of the primitive population as regards land animals.

The Urus (*Bos urus* or *promigenius*),

The Beaver (*Castor fiber*, L.), and

The Phoca (*Phoca gryphus*, Fab.),

are likewise species often met with, and which have constantly served for food to the primitive population. Now, the beaver has

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\* Mr. Steenstrup has published a whole treatise on the great penguin in the scientific communications of the Natural History Assemblies of Copenhagen, 1855.

entirely disappeared from Denmark, the phoca is still seen in the Kattegat, though very rarely, and the *Urus* is an extinct species. Speaking of the latter, it will not be amiss to enter into some details respecting the genus *Bos*, for species are often confounded. Many persons think, for example, that the wild ox of Lithuania is the *Urus*, whereas it is the bison. Setting aside the decidedly fossil oxen, we distinguish the following species :

1<sup>o</sup>. *Bos primigenius* (Boj). *Bos urus* (Nilsson). *Bos primigenius* (Owen). Thur, Ur, and Urochs, according to the Germans. A species now extinct, but which must have still been in existence in Switzerland in the tenth century of our era, for it figures among the number of viands that appeared in those days at the table of the monks of St. Gall. The manuscript\* mentions the *Urus*, the *Wisent*, and a wild ox which seems to have been simply the offspring of the domestic ox gone back to the wild state, and which, according to Tschudi,† was still hunted in the sixteenth century.

2<sup>o</sup>. *Bos bison* (Auct). *Urus nostras* (Boj). *Bison europaeus* (Leidy). Aurox, so called by the French. The *Wisent* and *Bison* of the Germans and the *Zuhr* of the Poles, *Bonasus* of the ancients. A species formerly spread all over Europe; no longer found at present except in the forest of Bialowice in Lithuania, where there exists a herd of some seven or eight hundred head, which owes its preservation to the ukases of the Emperors of Russia.

The skeleton of the *urus* is more thick set, squat, and much stronger. His atlas attains the enormous width of twenty-seven

\* *Benedictiones ad mensas Ekkeharde monachi Sangallensis*. Memoirs of the Society of Antiquaries of Zurich, vol. iii. Here is the passage in question :

Signet uesontem benedictio cornipotentem  
Dextra dei ueri comes assit carnibus uri  
Sit *bos siluanus* sub trino nomine sanus,  
Sit *feralis equi* caro dulcis in hac cruce Christi.

However *veson cornipotens* and *urus* may here be nothing more than synonyms of the same species. That is, at least, the opinion of Mr. Steenstrup.

† *Tschudi*. The Alps. Berne, 1859.

centimetres—10.63 inches (Museum of Lund). The *bison* is more slender, he is moreover furnished with thick fur and a strong mane, which appear to have been wanting in the *urus*, judging from what the ancients say.

3<sup>o</sup>. *Bos frontosus* (Nilsson).\* Appears to have existed in Denmark only in the domestic state, during the age of bronze and the first part of the age of iron, until about the commencement of the Christian era. There are extensive remains of them in the peat-bogs of Denmark. This species is distinguished from the others by the manner in which the horns are fixed on a lateral protuberance of the skull, and by the gibbosity of the occiput.

4<sup>o</sup>. *Bos taurus* (L.). Corresponds probably to the *Bos longifrons* of Owen. It is the most generally diffused species, as a domestic race, in the middle ages and at present. Only it attains a more vigorous development than formerly. The wild ox of the park of Hamilton, in Scotland (*white urus*), is the same species, but in a wild state.

The four species mentioned above present not only differences of race, they are really distinct species. It is only the first, the *urus* proper, which has been found in the *Kjoekkenmoedding*. The second, the *bison*, is missing, but is found, though rarely, in the peat deposits of Denmark.

The elk (*Cervus alces*, L.) and the rein-deer (*Cervus tarandus*, L.) have not yet been discovered in the *Kjoekkenmoedding*. They will doubtless be found therein, for their bones have been gathered among the remains of the stone-age in Denmark.

There are also found in the *Kjoekkenmoedding*:

- The Wolf (*Canis lupus*, L.),
- The Fox (*Canis vulpes*, L.),
- The Lynx (*Felis lynx*, L.),
- The Wild-cat (*Felis catus*, L.),
- The Sable (*Mustela martes*, L.), and
- The Otter (*Lutra vulgaris*, Erxl).

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\* Nilsson. Scandinavisk fauna, II. edit., Lund, 1847, p. 555.

These species are found more rarely than the preceding ones; they have, however, served as food to man.

The hedge-hog (*Erinaceus europaeus*, L.) and the water-rat (*Hypudæus amphibius*, L.) have been found accidentally in the *Kjoekkenmoedding*, where they also find bones gnawed by these rats.

Not the slightest trace has been found of the hare (*Lepus timidus*) in the *Kjoekkenmoedding*. But this can be accounted for when we reflect that the Laplanders and several other nations have a sort of superstitious repugnance for the hare, and would not eat it except when driven to do so by the utmost extremity of famine.

According to what has already been stated, the *Kjoekkenmoedding* have furnished no domestic animal whatsoever except the dog. And even with respect to that, it could not be ascertained *a priori*, whether the bones of the dogs which were found had belonged to a domestic or a wild race. The following is the way in which they have been able to solve the question indirectly.

It was surprising not to find, among the exuviae of birds, any but the middle part of the long bones, the heads having been broken off very irregularly. Whilst, numerically, the long bones form very nearly the fifth part of the sum total of the bones of a bird, they are in the *Kjoekkenmoedding* from twenty to twenty-five times more numerous than the other. Whence comes this singular preponderance of the long bones? It was thought at first that the ancients had consumed on the spot merely the limbs of the birds, reserving the carcasses for a stock of provisions at sea. This was rather far-fetched. Mr. Steenstrup bethought himself of keeping some dogs in confinement, and giving them for a certain time birds to eat. He then found that all that the dogs left were the same long bones, such as the *Kjoekkenmoedding* present. All the rest had been devoured. Some other carnivorous animal, such as the wolf or the fox, might, it is true, have done the same, although the wolf, for example, generally drags off his prey, and does not devour it on the spot. But as these numerous fragments of birds, thus gnawed, are found everywhere, in all the *Kjoekkenmoedding* that

have been examined and in every part of each of these deposits,\* it follows, that the people were accompanied by a domestic carnivorous animal, which is only represented by the dog. This induction is confirmed by the abundance of gnawed bones of quadrupeds. Nearly all the cartilaginous and more or less soft parts of the bones have been irregularly subtracted. Often the marks of the teeth that have gnawed the bone, are sharply defined. Thus one rarely finds a shoulder-blade that has not been gnawed, or a rib whose extremities are entire.

The marks of knives which Mr. Steenstrup observed on the bones of the dog, led him to conclude that the primitive population ate this animal, as is still done in many parts of the globe, in America, Oceanica, Africa, and, as it would appear, even in Europe. Mr. Forel de Morges has asserted that in the Riviera of Genoa they eat dogs, and that rats are considered a delicacy there.

They have not yet found in the *Kjoekkenmoedding* any traces of those young aquatic birds, which are taken in their nests, and of which there is at present a great consumption, in Jutland, for example. It is a dish in great request, and very abundant in certain localities; and there are some islets, perfectly barren in other respects, where the right to collect eggs and young birds produces a very handsome income. We might have been tempted to conclude from the absence of the remains of young birds, that the primitive population absented itself from the localities of the *Kjoekkenmoedding* from the month of May to August. But it is more likely that the dogs caused the disappearance of the smallest traces of the young birds, inasmuch as they left merely the very hard middle part of the long bones of even the adult birds, the splinters of which threatened to choke them. Man himself came in doubtless for his share in the matter, for we know of certain persons even nowadays eating whole quails, without taking the trouble to separate the bones.

The sojourn of man on the *Kjoekkenmoedding* grounds during the autumn, winter, and spring, is also indicated by the degree of

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\* About forty have been examined minutely.

growth of the horns of the deer and roe-buck, as well as of the embryos and young individuals of these species and of the wild hog, which have been eaten and whose remains are met with. Here again the summer season is not clearly marked, but as the primitive population dwelt on the sea-shore in winter, according to what we have seen, when speaking of the wild swan, it is very likely that it spent the fine season there also, during which it must have been much more comfortable in every respect.

MAN AND THE PRODUCTS OF HIS INDUSTRY.—The *Kjøkkenmoedding* have never presented any human bones. One may possibly meet with skeletons there, but in that case they belong to those graves, often of very recent date, which the inhabitant of the coast digs for the body of the shipwrecked individual that has been cast up by the sea. No ancient burial place of the age of stone has ever been observed there, and we understand in effect, that the primitive population would not bury its dead in such places. Besides, the numerous tombs of the age of stone in Denmark bear witness, by their often gigantic proportions, as also by their contents, to the respect in which the dead were held.

It is here worthy of remark, that there has never been observed in Denmark, either in the *Kjøkkenmoedding* or elsewhere, any signs of cannibalism, though an antiquary supposed that he had found such signs in a cavern in Belgium.\* If his observations were of value, we might expect that same fact would be observed in other parts of Europe.

There are sometimes found in the internal mass of the non-stratified *Kjøkkenmoedding*, as there are in the stratified deposits of the sea-shore, fire-places simply formed of a pavement of pebbles about the size of a man's fist. When we can obtain a quite fresh and clean section of a non-stratified deposit, we sometimes observe on each side of the fire-place a little black band, gradually becoming less distinct. This is made by the coal, which had been swept away when a new fire had to be lighted. These fire-places are

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\* Royal Academy of Belgium, Tome XX., Nos. 11, 12.

not large, they are more or less circular, and their diameter is somewhere about two feet.

Fragments of a very coarse pottery are not scarce. The vases have been molded by hand, and not by a lathe, and the clay has always been mixed with sand, evidently in order that the vases should not crack easily in the fire. This device is still resorted to by certain savage tribes of America; we find them even, when they cannot get sand, substituting for this purpose a powder of ground-shells. One fact had struck the Danish archæologists, namely: that the grains of sand imbedded in this pottery are angular, whilst no sand is found in the country but what is rounded by the action of the waves. They then remarked that the granitic stones of the fire-places, when they had been subjected to the action of fire, were easily reducible to coarse angular sand, corresponding exactly to that found in the pottery.

Mr. Emilien Dumas de Sommières (department du Gard), a much-esteemed geologist, and a great connoisseur in pottery, has observed a very great diversity of materials mixed with the paste of the ancient pottery. These substances seem to vary according to the mineralogical character of the region. Thus it is that in the departments of the Gard, Vaucluse, and Bouches-du-Rhone, the ancient pottery contains generally little rhomboidal fragments of white spathic carbonate of lime. In Auvergne, in the Vivarais, and even at Agde, near Montpellier, where there exist also ancient traces of volcanic eruptions, the place of calcareous spar is supplied in the ancient pottery by volcanic scoria (*peperino*). Lastly, in Corsica, a few years since, they made use of amianthus in the manufacture of common pottery, which gave it great toughness and tenacity, and enabled it to resist most efficaciously the effects of a blow or of irregular dilatation. Amianthus is also found mingled with the paste of some Chinese vases of common manufacture. It is likewise known that the walls of Babylon and certain constructions of ancient Egypt were built of bricks dried in the sun. In making these bricks they added to the sandy clay which composes them, chopped straw, and even fragments of reeds and other marsh

plants, in order to produce greater strength in the mass. Besides, this necessity for the addition of straw is well established by the fifth chapter of Exodus, which alludes to the refusal of the king of Egypt to furnish the Israelites with the straw required for their work.

The age of stone, as we know, is characterized preëminently by the presence of arms and instruments of flint, or of some other kind of stone, and which are frequently of beautiful workmanship, especially in the islands of Denmark. Now, in the *Kjoekkenmoedding*, it is true that there are found a great abundance of instruments of silex, but they are so very rough and unshapely, that one might take them at a first glance for mere pieces of stone. Nevertheless, with a little attention and comparison it becomes easy to recognize them as wedges or hatchets, chisels, and especially those long and narrow splinters called knives. All these objects are simply hewn by hand, by successive blows with another stone; they are of coarser workmanship than many objects of flint found elsewhere, especially in the tombs. This has caused it to be believed that the *Kjoekkenmoedding* might belong to a first age of stone, which should be distinguished from a second one, to which ought to be attributed the handsome specimens so frequently found in the North, and which bear witness to a general progress of civilization. It is possible that this is really the case, but there is as yet no decisive reason in favor of this opinion. If none but very rough objects are found in the *Kjoekkenmoedding*, it is not very strange; since in ancient times, any more than nowadays, would people be likely to scatter objects of value among their sweepings, and we should, therefore, merely find the refuse of their industry. Notwithstanding, there have really been found in the *Kjoekkenmoedding* some rare specimens of fine workmanship. They are, a lance-head of silex, an arrow-head of silex, and a little hatchet of trap (volcanic rock), of regular shape and nicely bored, all which would certainly not indicate an industry just at its origin. Finally, the bones of the animals which have served as food to the primitive population bear positive witness to the use of well-made instruments. They

(the bones) have been jagged and chipped in divers ways, either when the animal was being cut up or when portions of it were being eaten, and the flesh was separated by means of knives. Now, on examining attentively these marks, we recognize that the primitive population made use of well-ground and keen-edged instruments, which have made incisions in the bone as clearly as a good steel knife would do. A simple splinter of flint, however sharp it may be, and supposing it not to be ground, will leave a mark bearing the character of the saw; that is to say, there will easily be seen in it, by the aid of a magnifying glass, a number of parallel striæ. Therefore, in the age of the *Kjoekkenmoedding* they had already instruments of silex of good workmanship, only they did not fling them away among the rubbish, but they took good care of them, since they must have cost much more labor than our steel instruments.

Besides the rough instruments of silex, already spoken of, there are found in the *Kjoekkenmoedding* a tolerably large quantity of hewn pebbles, but in such a shapeless manner, that the workmen could evidently have had no other intention, when thus preparing them, than to give them sharp edges and angles. Now, if we reflect that an angular pebble will wound much more severely than a round one, it becomes very probable that we are here presented with the offensive projectiles of the primitive population.

Pebbles cut in this way are frequently found in the turf-bogs of Denmark. They were probably thrown in old times, either by hand or by slings, at aquatic birds, and have since become inclosed by the turf in its process of formation in these localities. Let us remark lastly, that in the salt-works of Hallein, in Austria, there were found, together with a bronze hatchet, a little wallet of skin containing two projectiles like those above alluded to.\*

The *Kjoekkenmoedding* furnish a tolerable quantity of ends of deer-horns, which have been cut off and broken. It was naturally the refuse only which was thrown away, and so the pieces that were wrought and finished are missing. Nevertheless this refuse shows positively enough that well-ground chisels of silex were used, and that they were managed with skill.

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\* These articles are preserved in the museum of Salzburg.

Carved bones have also been met with in the *Kjøkkenmoedding*. They were made into awls, chisels, and even a sort of comb very neatly fashioned, which appears to have been used in the manufacture of thongs from sinews.

A circumstance worthy of notice is, that all the solid bones, not hollow, of quadrupeds, are entire, whilst those which are hollow are found, almost without exception, broken, showing frequently the mark of the blow by which they were opened. The primitive people were evidently fond of marrow, which they extracted wherever they found it, either to eat it, or to employ it with brains in the preparation of skins, as is done by the savages of North America.\* The hollow bones (*os metacarpi* and *metatarsi*) of ruminating animals, such as the deer and roe-buck, presenting a longitudinal partition, which separates more or less the marrow into two parts, have always been split transversely to this partition in the direction of their length. Thereby the two compartments of the marrow were laid open at one blow; and its immediate extraction was thus rendered easy. The same process is still in vogue among the Laplanders and the Greenlanders, with whom the marrow, still warm from the natural heat of the animal, is considered the greatest delicacy and a dish of honor, which they offer to strangers and to the employés of the government. The dexterity with which these people thus open the bones of the reindeer, is said to be surprising. It is to be noticed, however, that they split the hollow bones of the reindeer longitudinally, and parallel to the middle partition, which is very thin in this species.

Another circumstance affords its testimony to the practical sense of the primitive people of Denmark. It is that, for the fabrication of instruments and objects of bone, they have been clever enough to select and to profit by that portion of the skeleton of the animal whose structure offers the greatest density and strength, namely: that on the inner side of the radius.

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\* Hearne. *Voyage du Fort du Prince de Galles à l'océan Nord en 1769* 1772. Paris, vol. vii. p. 343. "The Indians prepare the skins with a lye made of brains and marrow."

## American and Foreign Intelligence.

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*Malingering.* By TOM. O. EDWARDS, M.D., Chicago.

You were kind enough to print my article on Malingering, and I fulfill my promise to continue the subject. In that communication I referred to increased and diminished size of parts, to the production of tumors by inflating the subcutaneous tissue with air, the simulation of ascites hydrocephalus, dropsies of joints, malformation of joints, curvatures of the spine, wounds, ulcers, superficial inflammations, spasmodic affections, as epilepsy and hysteria and paralytic affections, and endeavored briefly to point out the diagnostic signs between the real and feigned diseases mentioned. There came under the classification of diseases obvious to the senses another class of diseases not obvious to the senses, but dependant upon the description of the impostor. We may divide this class into diseases of exalted or reduced sensibility, of pain, or absence of sensation.

The obscurity which ever has and ever will enshroud the nervous system, render the efforts of the physiologist in his inquiries of the cause of exalted sensibility in pain, extremely obscure and unsatisfactory. Increased sensibility in a part may exist and no visible sign of its presence, hence this symptom is more frequently assumed than any other from the great success and unanimity with which it is practiced. There are many external pains, such as tic dolereux, the causes of which are obscure, and which leave no visible sign of their existence, and yet no disease is more formidable in suffering or less amenable to treatment. Men have committed suicide rather than endure the torture of a disease, which externally gave no evidence of its presence. Upon the patient's statements we are compelled to rely for information in relation to the seat and violence of such affections, and we cannot be too careful in giving opinions in a disease the only element or phenomenon of which is pain, as gross frauds may be the result of our diagnosis, or patients in real disease may be regarded as feigning. The nature of the pain, the presence or absence of the symptoms of disease with which it is ordinarily associated, the general character and appearance of the patient, and the consistent account given of the cases are important items for observation. We should guard opinions in examination of diseases in which pain alone is the cause of complaint, and should rely on time and accident to expose the fraud. Internal pains are mostly assumed, as those on the exterior are regarded as trivial, and a train of phenomena, such as heat, redness or unnatural color, are not unusually attendants on the real suffering. Gout and rheumatism are favorites

with Army Malingers. Neither of these diseases can exist in severity without inducing changes in their locality. Heat, redness, tumefaction or retraction of the parts are characteristic of these diseases. True, there may be slight cause of complaint, and from peculiarity of organization or fretfulness of temper the case may be magnified. We have also pains, severe and long continued, from scurvy and syphilis, the seat of which cannot be ascertained. The Malingerer will seldom submit to severe agents in these assumed external diseases. He will most commonly ask if nothing milder could be used, and if his request be acquiesced in, he will be better or worse until he is assured severe treatment will be instituted and then he is suddenly cured.

Internal pains selected by one feigning illness will, if properly managed, lead to detection. Thus a patient complains of constant agonizing pain in the head; he has no vertigo, no loss of sleep, fever or delirium; he says he has violent, deep-seated pain in the stomach and bowels, and neither impaired digestion nor loss of appetite be present; pain in the kidneys, and there is no retraction of the testicle nor diminution or alteration in the urine. Should any or all these necessary attendants upon these diseases be absent, and only pain be complained of, we have grounds of suspicion which it would be well not to disregard. If these pains are said to be constant and intensely violent, and yet the patient sleeps well and enjoys his food, there is room for doubt. We should avoid the exposure of our suspicions and be careful in our prescriptions. If we desire to place him under the influence of anodynes, they should be administered in food, as the sagacity of the patient may detect the purpose and he will measurably thwart our purpose.

The most astute minds have been imposed upon by the assumption of pain, and long, protracted, fatal suffering has been declared feigned, and the patient deprived of sympathy and kindness. Fodere relates a case in which he mistook real pain for feigned. "I refused (he says) for fifteen years, a certificate of exemption to a young soldier, who complained of violent pains, sometimes in one limb, and sometimes in another, and occasionally in the thorax and pericranium, without any external sign to indicate its existence. He died in the hospital from the effects of the malady—which he always insisted was a species of rheumatism. I examined the body after the death—viewed all the former seats of disease—but discovered nothing, either in the membranes, muscles, nerves, or viscera, and was hence led to believe that life was destroyed solely by the repetition and duration of these pains." Bitter was his mortification and regret that he had persisted so long in opposing the wishes and depriving the soldier of his discharge, and in the leniency of the rememberance of this case, the following one was presented to him. An artillerist from the Hart de Bonce, was brought to the hospital with a violent pain in his left leg, which was attributed to sleeping on the damp ground. Dur-

ing the space of eight months, a variety of antimonial preparations, together with mercurials and tonics, when indicated, were administered, with local remedies, but without any relief. The leg, from the repeated use of epispastics and cauteries, became thin, and rather shorter than the other, while from the low diet ordered there was a general paleness and lankness of the system. Under these circumstances, Fodere could not refuse him a certificate, as a real invalid. With the aid of his crutches he dragged himself to Versailles, where he obtained the promise of a discharge. He was ordered to return to the fort to await its arrival; but on his way thither, being overjoyed, he was met by his commander, walking without his crutches. On being put into prison, he confessed the fraud. It will require close observation and an intimate acquaintance with real disease to detect those of which pain is the most prominent symptom, as no words can adequately describe the difference. A general set of phenomena must be carefully sought and traced to their origin, such as gesture, expression of countenance, posture, and uniformity of symptoms.

Diseases attended by diminished sensibility are frequently assumed, and sometimes successfully. The most common is Amaurosis, and so successfully can this be assumed, that no possible means, other than careful watching, can detect the fraud. The pupil is dilated; the eye is learned to roll, and a feigned inability to fix the sight upon an object, are the symptoms. These are produced by the use of agents that act upon the nerves of the retina, and produce dilatation. Hyoscyamus, Belladonna, etc., are locally employed in cases of this disease; when recent we may by carefully examining the patient be enabled, by the absence of all gastric derangements and febrile phenomena, to be put upon our guard, and by putting a strict watch upon the actions of the patient, time will develope the rest. Fodere recommends the placing of the patient on a precipice, and ordering him forward. If there be real blindness, this procedure would be cruel and fatal, and was exhibited in a case of a recruit who was suspected of assuming blindness, being put on the bank of a river and ordered forward. He went forward and was rescued, but afterwards confessed the fraud. Myopia, Amblyopia, Nyctalopia, Hemaopia are all diseases found among Malingeringers. We detect the Myopist feigner by putting on him glasses worn by persons known to be thus afflicted, or by placing a book close to his eyes and observe his efforts at reading.

No diseases are more difficult of successful treatment than those of the ear. Deeply encased within the bony enclosure, we have but limited means of investigating the changes induced by disease, and we are less familiar with diseases of the ear than any other organ. Deafness is therefore frequently assumed, but he who attempts the fraud must either be a bold or a skillful man. Those who are really deaf acquire a peculiar physiognomy and have certain gestures difficult to acquire, and are sometimes detected by a want of preparation for a sudden examination; yet

the ingenuity and perseverance of some have put at fault the most skillful examination, and time and artifice have ultimately unmasked the impostor. Fodere, to whom we are indebted for most ingenious means of detecting the various frauds in disease, as well as the use of the most cruel tests, with all his observation, was frequently imposed upon. He examined a deserter alleged to be deaf. Every possible means failed, until Fodere assumed a patronizing air, assured him he should be discharged if he confessed to him privately. The man's prudence was betrayed, and to the whisper of Fodere confessed the imposture. Another instance of the intentional dropping of a piece of money, attracting the patient's attention, and thus exposing him after various tests, such as firing pistols, or platoons of musketry, without the least affecting him. A constant watch should be set upon the actions of the suspected person, and matters calculated to excite or alarm his fears should be introduced in conversation. Put your hand upon his pulse, detail some bad news, or terrible disaster, or threaten punishment, and you will generally perceive its increased action. Call them suddenly by name, fire a pistol closely to the ear, rouse them from sleep, or put them under the influence of ether, and on awaking the sense of hearing may be aroused and the will not enabled to control it. A very good way to test the truth or falsehood of a case occurred in a neighboring city a few years since. A man presented himself and by signs requested alms. The physician suspecting fraud, motioned him to sit down, and placing a note in his son's hand, told him to pretend to get that changed, but in reality to find a police officer, as this man's description answered well that of a man accused of having committed murder the night before, and he would have him arrested. The boy had scarcely left before the beggar hastily departed.

To assume to be deaf and dumb requires extraordinary skill, yet our books are full of cases resisting the most rigid and persistent examination. The means used to detect the imposition of deafness may be successfully employed in such cases as firing a pistol, or communicating startling or threatening information when examining the pulse. The double infliction is seldom present unless it be congenital, as the powers of articulation are never lost unless there be some cause appreciable to medical inquiry. Indeed it is a question whether the entire absence of the tongue is a sufficient cause for muteness, as cases are recorded of persons articulating without the tongue. In these instances the muscles belonging to the tongue probably were not deficient. As a general rule it may be stated that if a person not deaf can move his tongue he is not dumb, as nothing short of complete paralysis can account for his being dumb. Three cases are recorded of the entire loss of the tongue, yet articulation was distinct—a Portuguese girl, a boy having lost his tongue by gangrene, and an American girl—the history of each interesting and instructive. Also the history of Victor Fay, detected by Fodere, is one of the most successful and persistent cases of assumed muteness on record. He persisted two

years; deceived the most scientific men in three countries, and finally was detected by mutes in a school designed for their special education. Those possessing Fodere's work will find in this case abundant food for reflection, and will be guarded in hasty prognosis.

We are frequently consulted by parents in relation to children at certain ages not talking, and our utmost skill and character are sometimes necessary to quiet apprehensions, or prevent the charlatans receiving credit for that which medical acumen and time will avert. A professor in a neighboring city lost the confidence of a family by not appreciating the fears and apparently sympathizing with them, or not sufficiently informing them, in the case of a child unable to articulate. She was five years old and had not spoken; heard very well; was sprightly and intelligent, but labored under chorea, and as a consequence the general health of the child was impaired. The professor prescribed a general routine, gave but little information as to the origin of the defection, and was superceded by a specialist, a publishing ear doctor, who carefully examined the case, observed the free motions of the tongue, prescribed a change of air, generous diet and preparations of Iron, with the certain promise of the speedy acquisition of the power of language. The case terminated favorably, and a flaming certificate brought many patients to the *skillful aurist*.

Diseases consisting of whole groups of symptoms are sometimes feigned. A disease to which all are subject and which probably destroys primarily or consecutively more lives than others, is fever, which can be most fully counterfeited. The frequency of the pulse, chattering of the teeth and hot skin, may all be induced for effect. The use of strong stimulants, as brandy, gin or cantharides, also the introduction of capsicum, garlic or cloves into the rectum will produce a glow of skin simulating fever. The brown tongue of typhoid fever is readily produced by ext. liquorice or coffee browned. I saw a family thrown into the greatest distress by a favorite son having been brought home frightfully excited, with violent vomiting and dilated pupils. The head was hot and between the paroxysms of vomiting; the skin was intensaly hot; pulse irregular, sometimes frequent, then slow; articulation indistinct. Cold was applied to the head and sponging to the body during the excitement, and after that stage had passed warm brandy toddy restored strength and consciousness. The boy had made his first assay on manhood that day, by trying to learn to chew tobacco and had incautiously swallowed the juice. These symptoms were indicative of a severe paroxysm of fever, violently implicating the brain and stomach. Violent exercise with friction may excite the warmth and redness of the skin, and these present with a colored tongue all the phenomena of fever. A few hours watching, if any doubts exist, will remove the obscurity, as the symptoms in these cases rapidly subside. A profoundly intoxicated man would embarrass a physician who failed to smell the breath of the patient, and not a few are the mistakes

of casual observers, and severe animadversions have been passed on opinions of the existence of disease where intoxication only was present. I remember a mistake of this kind which not only influenced public opinion detrimentally to the doctor, but did more to overthrow opinions of the whole class of the Thompsonian fraternity in Maryland. As other popular illusions it had overcome the bounds raised by law for the protection of life, and all men were allowed the privilege of practicing and charging, by repeal of laws existing from the origin of the State. A shoemaker in Washington county bought a patent and forgetting the maxim, *ne sutor*, etc., had so imposed on popular credulity as to have at one time the largest practice in three of the most populous counties. To test the doctor's skill (whose pretensions were the ridicule of all sensible men, and, unhappily, there as here they are not over numerous), a profoundly intoxicated man was placed in bed by a party and the doctor suddenly summoned, and informed that from an upset from a sleigh the patient had been thrown on a curb stone and it was feared a fractured skull had resulted. The doctor carefully examined the case and very oracularly stated, "that the brain were not hurt, but that the patient would certainly die, and it was his wish that the body should be examined by the calomel doctors, as one thing was plain—that a *Gut are broke*." Unfortunately for the doctor, a few hours sound sleep restored the patient, and the jest was too good for silence. No other argument was used in reply to the skill and success of the doctor than the ominous words that a "gut are broke," and in a much shorter time than had sufficed to give him the reputation and practice he had acquired, he disposed of his fine horses and is now engaged in his legitimate business.

As coma from fever or injuries of the brain and spine, differs in some respects from that induced by alcohol, the nose affords the best diagnosis. Also from disease resulting from the use of tobacco, in which coma exists, we have the fœtor of the breath to direct our inquiries.

Agues are feigned, *i. e.* the chill part. If no fever follows, we may be assured, after frequent repetition, that this is assumed. A gentleman of my acquaintance had a negro boy whose services were valuable, and who had a recurrence of fits of ague for several weeks. Three or four days nursing and treatment would check the paroxysms; but a return was constant, and the physician finding the health of the boy not impaired, by their frequent recurrence, gave him tinct. ant. and jalap. The boy returned at the usual period, and when about to receive the unpleasant compound, drew the handkerchief from his head and thought he was better, and as he could not get a seidlitz powder, declined taking anything, and did not return. As before observed, those who feign sickness are averse to active or unpleasant treatment. A mixture in the Eastern hospitals, called, for want of an official name, *Mistura Diabolica*, has performed most miraculous cures. It is composed of assafœtida, Glauber's salts and aloes, and is given in

very small doses, frequently repeated, so as constantly to impress the mouth with its nauseousness.

The diseases of the chest are more readily diagnosed, although formerly pneumonia was in the army, and now is, frequently assumed. It is unnecessary to put any educated physician on his guard in this disease, as his stethoscope will detect the malinger; but by wounding the throat, haemoptysis may be induced or pretended; mucous expectoration by constant hawking and coughing may also be produced; emaciation by abstinence or drinking acids, or by constantly sucking a copper coin may impair the tone of the stomach and thus induce disease. This is not uncommon in the army, and is traced to foreign importation.

The diseases of the abdominal cavity are assumed, and dyspepsia is the form. Care and watching can detect the fraud, as gastralgia, pyrosis and vomiting can be produced at will. Inflammation of the stomach is also assumed. The absence of the red papilla on the tongue and the long intermissions in vomiting are grounds of suspicion. Peritonitis and Hepatitis were much feigned in the British army in East India stations, and many discharges were granted soldiers for these diseases. After a time the urine was found colored with rhubarb; clay stools induced by muriatic acid; but the colored eye and skin, together with the listlessness and mental depression consequent upon this disease being absent, the surgeons suspected fraud, and the mixture Diabolica performed most remarkable cures, and was more successful than mercury. Nephritis is sometimes assumed. This is not difficult in the male to detect, as the retraction of the testicle is the guide. In the army, after severe attacks of Nephritis, the patients bring calculi alleged to have passed the urinary passage—found on analysis to be pebble, brick-bat or glass. In conclusion, as a general rule we would not be justified in treating diseases assumed to be feigned differently from the real. Low diet, strict confinement to bed and nauseous medicines may be the effectual plan and will generally succeed. It is but fair to malinger ourselves and to lead the patients by questions into incongruous and incompatible answers, to detect by a fraud that which cunning and artifice had formed for our disgrace and their benefit. The impostor is ever averse to taking medicine, careful watching, visits at unusual and unexpected hours. This proceeding detected one case of five months' deception.

The absence of motive for assuming disease is not conclusive that it is real. Some from desire for sympathy of friends and others from no explicable cause than moral insanity, assume to be ill; yet it is well at all times to endeavor to obtain the motive, as this may be a clue to the whole disease. The previous history of the patient and in the army the opinions of his comrades may serve to enlighten. In some cases, however, previous moral character will not be altogether reliable, as men of most unexceptional conduct have imposed on army surgeons. Searching the beds and pockets will sometimes reveal the irritating substance that pro-

duces an obstinate ulcer; and if an accomplice is suspected, perfect isolation will reveal all you want—the cause and the cure; and a thorough chemical test or microscopic examination of foreign matter alleged to be discharged, should be made.

I have thrown these thoughts and compilations together with the hope that some aid may thereby be given to a class of over-worked and neglected men now in our army, who are subjected to more imposition and mortification, more expected from them, and less remuneration, than any other human being. I mean army surgeons; and will have succeeded if I have aided even *one* in his responsible and heavy duties.—*Chicago Med. Jour.*

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[From the American Medical Times.]

*Foreign Correspondence.* By Prof. CHARLES A. LEE.

LUNATIC ASYLUMS.

447 LOUVRE HOTEL,  
PARIS, August 30, 1862. }

In my last letter I gave some account of the colony of Fitz-James and the lunatic asylum connected with it, at Clermont (Oise), conducted by Dr. Labitte. I was accompanied in my visit, as I have also been to several other asylums, by Dr. Brown, of the Bloomingdale Insane Asylum, near New York, who is inspecting similar establishments in Europe, at the request of the Trustees of the Sheppard Asylum at Baltimore, Md. This institution was founded by the late Moses Sheppard, a wealthy merchant of the Society of Friends, who, several years before his death, conceived the project of testing the curability of unfavorable cases of insanity, by a more liberal expenditure of money than the friends of most asylums would reasonably permit. To this end Mr. Sheppard, having no relatives, left his whole fortune, amounting to six hundred thousand dollars, to found and maintain an experimental institution for one hundred patients. After several years of careful consideration, the Trustees of the Sheppard Asylum have commenced the construction of their building, on a plan submitted by Dr. Brown, who now studies the organization and management of European Asylums, to report whatever may serve to carry out the humane purposes of the benevolent founder of this unique institution. Dr. Brown, after having visited the most celebrated asylums in Great Britain, Holland, Germany, Switzerland, and France, expresses regret at having found, thus far, but inconsiderable reward for the commendable liberality of the Board he represents.

I have also visited the most noted institutions of this kind in England and France, and, with the exception of the agricultural colony at Clermont, I have seen nothing deserving of special commendation which is not also found in our own country. Indeed, I

think, as a general rule, we are considerably in advance of the old world in the successful treatment of the insane, and our statistics will show a larger percentage of cures than can be found in the large majority of European asylums. And it is very natural that it should be so. Americans are the most practical people in the world; they are not easily led to adopt novelties merely because they are novelties, but which have nothing else to recommend them; but they speedily introduce every improvement which is founded in reason and common sense, and which promises any practical benefits, wherever it may have originated. The unreasonable and obstinate prejudice which exists in Great Britain, against adopting anything new from foreign countries, fortunately does not exist among us, and hence we are never found lagging far behind in the race of improvement, and the march of civilization. Hence, Prof. Ackland, M.D., of Oxford, who accompanied the Prince of Wales in his recent visit to the United States, expressed surprise that American physicians should visit Europe to examine lunatic asylums, for they would find better ones at home, as at Philadelphia, under the charge of Dr. Kirkbride (and, I may also add, at Bloomingdale, under the charge of Dr. Brown), than can be found in Europe. Such I know to be the opinion of the most enlightened physicians of England, Germany, and France, who have made themselves acquainted, by personal observation, with such institutions on both sides of the Atlantic.

In England I visited, among others, the great establishments of Hanwell, Colney Hatch, Bethlehem Hospital, etc., also the private asylums of Dr. Conolly and others, but I saw nothing which is not well known and carried out in the United States. The Commissioners of Lunacy have, no doubt, effected many reforms, and corrected many evils, though they have not always sufficient power to carry out the improvements which they recommend; still public opinion, sooner or later, corrects the evil, and the public reap the benefit of their wise and practical suggestions. Such Boards are needed in our own country, and it is to be hoped that it will not be long before all our States will adopt a similar measure. There will, necessarily, be more or less clashing and friction between such boards and the trustees and managers of insane asylums, but this is incident to all supervisory bodies, and must be expected. Still, the evident benefits and improvements which they effect is a sufficient answer to the objections sometimes brought against them.

In company with Dr. Hills, of the Ohio State Lunatic Asylum, I visited the great lunatic establishment at Charenton, which is designed by the French government as the model institution of the kind in France. It is organized on a grand scale, more than six hundred thousand dollars having been recently expended in its reconstruction. It is situated on an elevated plateau, or rather terraces, protected from northerly winds by the parc of Vineennes, and commands an extensive prospect of the valley of the Marne and the Seine. The numerous sections, all furnished with gal-

leries, courts, lawns, etc., allow of more classifications than can be found in any of our asylums. There are fountains in all the courts, and water is abundantly furnished for baths, etc., to every part of the establishment. The courts and buildings, also, are all lighted with gas, made on the premises, which is introduced into all the rooms and dormitories.

All of the rooms fronting the river command a very extensive and beautiful prospect, and the pay patients are each furnished with a separate apartment, and a place for the attendant to sleep. Both male and female wards are connected with extensive gardens and forests, where they walk a considerable part of every day. There is a farm, also, connected with the establishment, where the patients are "invited to labor," some of whom accept the invitation. But I could not learn that many of the patients were engaged either in gardening, horticulture, or agriculture; for there is not that system of organized labor which is so successfully carried out at the "colony" at Clermont. Many of the females are employed in needle work, embroidery, etc.; and there is a professor of music attached to the institution, who gives daily lessons in music; there is also a library, lecture-room, billiard-room, etc., provided for their recreation and amusement. Some are taken out in carriages to ride, music and dancing parties are held twice a week in the grand saloon, and as many of the customs of the world and French society are introduced as is thought useful or expedient. The establishment is placed under the authority of the Minister of the Interior, and is presided over by a director appointed by the Minister. There is also a "Consultive Commission," whose members are taken from the "Council of State," the "Court of Cassation," and the "Court of Accounts," appointed also by the Minister, and whose services are gratuitous.

The annual allowance for the establishment is proposed by the director, with the advice of the consultive commission, and approved by the Minister, to whom an annual report is made. The financial affairs come under the cognisance of the "Court of Accounts." Dr. Cabmeil is the Physician-in-chief, aided by several resident assistants. A chaplain also resides in the institution, who daily celebrates mass in the chapel. All the religious services are celebrated with the usual pomp of the catholic church, accompanied by the organ.

The dormitories are spacious, well lighted, and airy, and the passages warmed by iron pipes under the floor; but it struck me, as well as Dr. Hills, that there was generally a lack of proper ventilation. The day was, however, very hot and sultry, and no air stirring.

Patients are received here as boarders, and gratuitously on an order from the Minister, who has a certain number of *bourses* at his disposal, to be applied for a limited time in favor of persons having a claim on the government. There are three classes of boarders: the first, those who pay 1425 f., and upwards; the second, 1125 f.; and the third, 828 f., including washing. Certificates

signed by medical men, not more than a fortnight before admission, are to be presented on behalf of lunatics previous to their admission, and certain formalities have to be complied with. Having a general ticket of admission to all the hospitals of France from the Minister of the Interior, we were freely shown through every part of the establishment, which, we have no doubt, is admirably managed. The ordinary means of physical restraints are here employed to a considerable extent, and are, in my judgment, preferable to padded rooms and complete isolation, as practised in the British institutions, as society seems indispensable to recovery. The establishment now contains about nine hundred patients.

The great Hospice *Salpêtrière* is both an alms-house and a hospital, chiefly for incurable, epileptic, or lunatic female patients, and patients advanced in age. It contains 5204 beds, of which 2917 only are occupied by real patients. It is an immense establishment, consisting of forty-five distinct buildings, extending 1680 feet in length. The hospital receives, first, the *reposantes*, women who have been in its service thirty years, and who are upwards of sixty; second, indigent old women, upwards of ninety, afflicted with incurable maladies; third, insane and epileptic females. The lunatics, of whom three-fourths are considered dangerous, are kept in separate infirmaries and treated with the greatest care. I saw several hundred of them sitting at the supper-table, each with an ample allowance of wine, and a plate of ripe plums and apricots, besides bread, etc. It was a delightful sight to see the cheerfulness of the old ladies, and hear their merry chat as they partook of their evening meal.

The *Bicêtre* is situated on lofty ground, differing in this respect from the *Salpêtrière*, and enjoys a more salubrious air than most of the Parisian hospitals. It is an asylum for indigent old men and male lunatics, and receives about two thousand patients. It presents a square of nine hundred feet on each side, and contains three courts. The indigent and infirm old men occupy the greater part of the building. They have no private rooms, but there are large rooms with workshops and dormitories, as also several gardens and court-yards for exercise. They are obliged to work three hours a day at their respective trades, or other occupations, and receive in return a share of the profits; the rest goes towards defraying the expenses of the establishment. The daily allowance to the indigent is a portion of soup, a pound and a quarter of bread, four ounces of meat for dinner, vegetables or cheese at night, and a quarter of a pint of wine. The average daily cost of each is nine sous (cents), and the total annual expense about nine hundred thousand francs. The number of lunatics, idiots, and epileptics is about nine hundred, who have the same allowance as paupers, except a larger allowance of bread. Physical restraint, by strait jackets, etc., is very common. Generally, however, the treatment is very mild, and daily employment is given on a model farm and bleaching-ground, where there are also sties for breeding swine of superior breeds. This farm not only supplies the establishment,

but produces sufficient to partly supply the other Parisian hospitals. There are various kinds of schools in the establishment for lunatics of all ages. Instrumental concerts are often given by the patients. Voisin, Delasluave, and Moreau are the physicians having charge of the lunatics.

There are also numerous private lunatic asylums in the neighborhood of Paris, the most celebrated being that founded by Esquirol at Ivry, Dr. Marcket, of the Bicêtre, being resident physician; the *Maison de Santé du Chateau, Sainte-James, près Paris*, and the *Maison de Santé* of Dr. Blanche, at Passy. The establishment of *Sainte-James* is near the Bois de Boulogne, and is carried on by Dr. Casimer Pinel, the nephew of the celebrated Pinel. It is a very extensive old chateau, built in the reign of Louis XV., and in the style of that age, and was occupied during the reign of Louis Philippe by M. Thiers, his minister, the distinguished historian. The grounds, which occupy several acres, are handsomely ornamented with flowers, shrubs, and trees, artificial lawns, grottoes, and bodies of water, etc. There is a large and productive kitchen-garden, and a variety of fruit trees. The walks are pleasant and well shaded, and there is a commodious billiard-room excavated from a solid rock. There are several buildings appropriated to the patients who belong to the wealthier classes, and pay from seven to twelve hundred dollars annually. Nearly all have their own servants. The two sexes occupy distinct premises. The attendant sometimes occupies the same room with the patient, but more frequently an adjoining one, separated by lattice-work. The fire and lights are also placed in the servant's room, and are inaccessible. The main building seemed to me very poorly adapted to the purpose of an insane asylum, many of the rooms being small, and not being well lighted or ventilated. The Doctor is a member of the Legion of Honor, and an author of distinction. He very politely gave me several of his works on insanity. He is a great advocate for the use of prolonged baths, and long continued dripping of cold water on the head in certain cases of insanity, and has written a treatise on the subject. He has also written a work on the "Isolation of the Insane," which he deems advisable in a large majority of cases; not at home, but in a public or private asylum, and indispensable for the poorer classes. He insists on the great importance of resorting to it at as early a period as possible, and believes that the incurable cases originate from a neglect of isolation in the beginning of the disease.

The Doctor resorts to the usual modes of physical restraint in all violent cases, and where the patients are inclined to injure themselves or others. He is about sixty, of affable and agreeable manners, and enthusiastic in his specialty. He numbers about forty patients. The private institution of Dr. Blanche, at Passy, is also located in an old chateau of the age of Louis XV., built by Prince Carignan, and occupied by his descendants for many generations. During the French Revolution it was occupied by the Princess Lamballe, who was seized in this very house and dragged before

the Revolutionary Tribunal, to be brutally murdered by the mob before she could reach the guillotine. Extensive additions have, however, been made by Dr. Blanche, so that it is now tolerably well adapted to the purposes of such an establishment. The premises occupy several acres, which are well laid out in walks, pastures, lawns, etc., and planted with ornamental trees and shrubbery. Each patient has his own attendant and a separate apartment. Each patient pays, on an average, about one thousand dollars annually—some more, some less. Physical restraints are freely used, as preferable to padded rooms. Dr. Blanche does not believe in isolation, nor in prolonged baths, nor water drippings on the head. There may, possibly, exist some rivalry between him and Dr. Pinel, for they are rather antagonistic on many points. The Doctor spoke highly of Arnot's water-bed for paralysed cases. To the question, why general palsy was more frequent than formerly, Dr. Blanche replied that people lived faster than they used to, used up their nervous agency sooner than they formerly did, which I conceive is the true explanation. He said that domestic unhappiness was a very frequent cause of insanity ; that there were few happy marriages in France ; that those in Paris could easily be counted ; that most of those who lived together were not man and wife, etc. I hope he is mistaken.

Dr. Blanche showed Dr. Brown and myself every part of his establishment, and explained fully his views in regard to the management of the insane. He has about eighty patients, and his terms, as will be seen, are about the same as those of Dr. Pinel. This must suffice for the public and private lunatic asylums of France. The subject is far too vast to be treated satisfactorily within the limits I have allotted myself ; but there are other topics, at least as interesting, which demand our notice, and which will receive attention in future communications.

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*Influence of First Impregnation on Succeeding Offspring of Mother.*—Mr. Bullock Webster, writing to the *Times* from Algiers, on the subject of marriages of consanguinity, confirms the well known facts of the influence of a first impregnation on the character of all succeeding offspring by the same mother. “The system,” he says, “of breeding in and in, as far as my experience goes, even in what may be considered the finest bloods, has always produced greater aptitude to fat, small bone, and tendency to disease. Clever physiologists may account for this, but I should like to know how they can explain this one significant fact, viz.: that an Arab mare that has once had a colt by a half-bred horse can never again breed a pure Arab ; the colts, even after any number of years, always taking, to some extent, after the horse she first bred by. The same rule holds good with regard to all our breeds of short horns or Hereford cattle, Leicester or Southdown sheep, Fisher Hobbs' pigs or his pointers.—*Med. Times and Gaz.*, Sept. 6, 1862.

—We select the following description of the Springs of Vichy from one of Prof. Charles A. Lee's interesting letters to the *American Medical Times*:

"There is no country in the world where mineral waters are held in higher estimation than in France. This is shown by the fact, that the preservation and management of all the important mineral springs are under the direct control of the government, and form a distinct bureau under the minister of agriculture, commerce, and public works. They are now under the immediate charge of M. Nanta, Chief of the Division of Mines and Manufactories. He is aided by a *Consulting Hygienic Committee* consisting of nine members, of which M. Rayer, Dean of the Faculty of Medicine and Physician in ordinary to the Emperor, is president. Thirteen other physicians of eminence are designated by government to aid in the deliberations and consultations relating to mineral waters; and their names are annually published in connection with the other officers of State. Besides this, the *Imperial Academy of Medicine* has a permanent standing committee on mineral waters, consisting of six of its most distinguished members, besides a leading chemist. Besides these, there is an *Army Council of Health* under the minister of war, who have a voice also in regard to the use of mineral waters; of this, M. Vallant is President and Medical Inspector.

"There are, in all France, one hundred and sixty-five mineral springs of greater or less celebrity; the most important of which, already stated, belong to and are controlled by the Government.

"Vichy may undoubtedly be placed at the head of these, if we consider the reputation it enjoys, and the number of invalids who annually resort hither to make trial of its waters. The Emperor may be said to have taken it under his especial patronage, as the Empress has that of *Eaux-Bonnes*, for he occasionally takes up his residence at Vichy in July, and protracts his stay till late in August, or rather, till the great national fete of the 16th of the month. It is well known that he has been somewhat of an invalid for several years past, and it is generally believed that he finds the use of the waters extremely beneficial. Some idea may be formed of the popularity of the waters, when I state, that up to the 15th of September, 1861, 16,440 strangers had visited the place, and up to the 20th of August of the present year, 15,483 patients had registered their names, besides 1,324 servants who accompanied them. These, as the register shows, came from every country in Europe, and a considerable number from North and South America, and the West Indies. There can be no doubt that some fashionables are attracted hither by the presence of the Emperor, but the vast majority to try the medicinal effects of the waters.

"There is nothing attractive in the appearance or situation of Vichy; it is a hot, dusty place, far more so than our Saratoga, while its surroundings are far less agreeable. It consists of the old and new town; the streets of the former narrow and irregular, while the houses are mean and ugly; but the new portion is better

laid out, though still without much order or regularity, the houses being built of the same light-colored sandstone which is universally used all over France. It lies on the left bank of the Allier, a moderate-sized river, in summer occupying a tenth part of its ordinary channel; nine hours by express train from Paris, on the Orleans line of railway. There are numerous *grand* hotels; everything is grand in France; even the principal spring here goes under the name of *Grande-Grille!* The price of board, including rooms and the use of the salon, is from one to three dollars or more per day, according to extent of accommodations. A patient, however, as at our own watering-place, can adapt his expenses to his means. All the hotels have a *table d'hôte*, but the patient can resort to a restaurant, and thus live at less than half the expense. There are some establishments chiefly patronized by the fashionable, who resort hither for gambling or amusement, such as the hotels Guillermin, de Paris, Germot, &c. Lodgings generally have to be secured in advance; one-half the residents seem to be in the confectionery line, for their shops are filled with pastilles and sugar plums, made with Vichy salts, sugar, and flour, or gum and '*sucré d'ogre*,' a 'digestif alcalin,' very much in vogue.

"The springs, nine in number, were first taken possession of by Napoleon I. in 1810, who opened a park, and authorized the acquisition of the necessary land. The large establishment was erected in 1820, but it was not till 1845 that the government took entire control of the waters. The second thermal building was erected in 1858. These are large and commodious, and display considerable architectural taste. There are 306 bath rooms, and 39 separate rooms for *douche* baths, which seem to be greatly in vogue. In 1853, the government sold 100,520 bath tickets, and sent out 361,000 bottles of the water. In 1857, 105 tickets were given out, including 27,000 gratuitous, and 700,000 bottles of water sold; in 1861, 280,000 bath tickets sold, and 1,250,000 bottles of water sent out and sold, and all this in addition to the immense quantity of the dry salts, extracted from the waters, and the *pastillei*, made for the government from the same salts and distributed over the kingdom. Thus it will appear that these mineral waters are a source of no small revenue to the government, and are annually becoming more and more profitable. The presence of the Emperor and the increasing pecuniary value of the waters has given quite a spur to improvements recently; manifested by the formation of a new park and ornamental grounds on the banks of the Allier, the construction of a new suspension bridge, the exterior of the railroad from St. Germain des Trosses to Vichy, and the erection of many handsome seats and villas in the neighborhood. I visited the large establishment for extraction of the natural salts, which is in charge of a special agent appointed by government, and every precaution is taken to prevent fraud by adulteration or substitution, and the same of the water sent out in bottles. So extensive is this distribution, that there is scarcely any part of the world where the natural Vichy water, or its salts, cannot be had. The remedial properties must be reserved for my next letter."

*Clinical Remarks on a peculiar Form of Disease of the Jaw in an Aged Patient.*—Familiar as he was with diseases of the jaw, and he had seen as many examples as most surgeons, here was an instance, Mr. Fergusson remarked, of disease he had never seen before or read of. About the middle of June the patient had called upon him with a letter from a friend. He noticed something wrong with his jaw, and on looking into his mouth, he asked if he had a bit of potato in it. To his astonishment he found it was a growth upon the jaw. Some surgeons would call it fibrous; but it was a form of disease which he had never met with previously in this or any other part of the body. It looked like vegetable matter, or greatly elongated papillæ. He could not undertake to give it a name. It was something like malignant disease; and a question arose as to what ought to be done.

The friend who wrote to him (Mr. Fergusson) had operated several times. It would, perhaps, have been better to have removed the whole of the jaw; but he did not like to submit so old a patient to such an operation, for his age was eighty years. He selected a milder method, that of cutting the disease out instead of making a large wound in the cheek. He removed on this occasion (June 21st) probably the greater part of it, together with its base. It certainly was not unlike medullary disease. He thought he had succeeded in taking away the whole of it. If there should be any left, he expected to remove or destroy it by means of chloride of zinc. We shall see, Mr. Fergusson observed in conclusion, when the granulations spring up, the process the disease may take; and we must look upon the present case more as an instance of the curiosities of pathology than of surgery.

It may be remarked, that the disease was confined to the right side of the lower jaw, and looked like meat that had been macerated for a long time, and had become bleached of a pinkish white color.

On the 12th of July it became necessary to repeat the operation; for although but three weeks had elapsed since the last occasion of removal, the tumor had grown very rapidly, and in general characters resembled its predecessor. It was cut away chiefly by means of curved forceps, and portions of it were scraped from the bone. With regard to the last, very little of it was left, and Mr. Fergusson mentioned that it was necessary to proceed with caution in such an old patient.

After remaining about another fortnight in the hospital, the patient left for the country. Up to this time there had been no further recurrence. The cicatrix was, however, touched with the chloride of zinc.—*Lancet*, Sept, 6, 1862.

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*Excision of Nerve in Neuralgia.*—Dr. Markoe related to the New York Medical and Surgical Society (June 1, 1862), a case of a clinical patient on whom he operated for tic-douloureux, by the removal of a portion of the inferior dental nerve. The man had suffered during a period of ten years, several attacks annually.

During the past two years his sufferings have been almost without cessation, and aggravated occasionally by very severe paroxysms. Section of the supra-orbital nerve had produced little or no effect; the mental nerve had also been divided without relief.

The pain had lately become localized in the mental and dental branches—occasionally radiating to upper branches. A removal of a portion of the dental nerve was advised. This operation was performed. The bone was laid bare and chiselled so as to expose the canal of the inferior dental nerve. One inch of the nerve was removed. It seemed congested and considerably hypertrophied, but microscopic examination did not detect any change of structure. The relief of the pain was almost immediate. He has had but one slight paroxysm of pain since the operation, six weeks ago, and is now well enough to return to his occupation. Dr. Markoe thought the case remarkable for the rapid subsidence of pain after the operation. The sensibility of the jaw is being gradually restored.

Dr. Parker, in connection with the discussion that followed, related a case where he removed an inch and a half of the posterior tibial nerve for neuralgia, affecting the ramifications of this nerve in the foot. The pain subsided for a time after the operation, but returned. The limb was then amputated. The specimen, which is now in the muesum of the College of Physicians and Surgeons, shows that the continuity of the nerve was restored after the operation, either by the formation of nerve or of substance capable of preforming the function of nerve.—*Am. Med. Times*, Aug. 9, 1862.

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*Human Remains of Remote Antiquity.*—At the meeting of the Ethnological Society, held on the 1st inst., Mr. Mackie described the human remains found at Markham, in the Valley of the Trent. The skull possesses very peculiar characteristics, and belongs to an extinct and per-historic race of men. Its most remarkable feature is the unusual direction of the foramen magnum. The direction of this plane, indicating an approach, though in very remote degree, to the head of the gorilla and the chimpanzee, leads to the inference that the individual to whom it belonged was possibly not completely erect in his carriage. The other human bones discovered, including those found at the Heathery Burn Cave, belonged to the same pre-historic race of men.—*Med. Times and Gaz.*

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*The New Process for Preserving Meat from Putrefaction.*—This process, shown at the Exhibition, is to extract the atmospherical air by means of a vacuum, and then to admit nitrogen or azote. This permeates the substance of the flesh, and prevents the putrefactive change which would otherwise ensue.—*Lancet*.

*The Italian Campaign of 1859—Medico-Chirurgical Letters from General Head-Quarters.* By Dr. A. BERTHERAND, Principal Medical Officer of the First Class, etc. etc. Translated for the AMERICAN MEDICAL MONTHLY.

From Castiglione to Cavriana—A Battle-Field—The Wounded of Solferino and the Amputations at the Ambulance Station of the General Head-Quarters.

To DOCTOR F. BERTHERAND :

*My Dear Brother*—Battle-fields succeed and resemble one another with such uniformity in this Lombard land, the sadly privileged arena of war, that I will employ neither my time nor yours in detailing my journey from Castiglione to Cavriana, on the 26th of June, across the desolated regions of Solferino and Cassiano. For the first half of the way, the contest, rendered more desperate by the bare, unprotected nature of the ground, had swept away every trace of cultivation like an avalanche or an inundation. The vigorous stalks of the Indian corn lay prostrate everywhere, tangled and matted in the trodden earth of the furrows. The long files of mulberries, the pride and the fortune of these rich plains, mutilated by grape, now stand only as ranks of decapitated trunks.

Of the boundary stones which mark out the fields from Castiglione to Mantua, as indeed on all the highways of Italy, some are torn up, others dashed into fragments, while those least injured bear terrible scars. Amongst piles of shakos, knapsacks, uniforms, and shattered arms—lies here a broken-down wagon—there the entire load of a caisson thrown out by the Austrians to lighten their flight. A little farther on, wheels and broken axles attest the precision of the fire of our new artillery. The walls of Cassiano and Solferino let the sun shine through them, pierced in the morning for defense, riddled at night by assault.

Between these two villages a piece of the enemy's artillery had been overturned in a ditch by the roadside, and its drivers being unable to drag it out, had abandoned it. Alone—like that other last friend of misfortune in the *Convoi du Pauvre*—the dog belonging to the battery would not leave the piece under which habit, and it may be affection, held him enchain'd. His restless barking and plaintive and despairing howls seemed to reproach his master with forgetfulness of that fidelity which honor should compel in the soldier's heart, and of which a new and touching expression was revealed by the instinct of this brute !

I promised, my dear friend, not to stop too long by the way : I leave on the left, then, these steep counter-forts, intrepidly carried by our troops, retaken, lost, taken yet again by the Austrians, and

finally left victoriously in our hands. This square pyramid, planted on the crest of a hill, like a light-house on the end of a promontory—but, to *watch*, not to *enlighten* the neighborhood—is the *Tower of Solferino, la Spia dell' Italia*. Despite the brutal shocks of the cannon, there still remain fragments enough of the old feudal manor, long to consecrate this burial-place of heroes. A group of soldiers whose eyes were fixed with attentive curiosity upon a small mound of earth, showed me the spot where, the night before, the Emperor and his escort were the mark of the enemy's balls. One of them struck the horse of the Surgeon-in-Chief, Baron H. Larrey, a little in front of the shoulder. Haemorrhage from the external jugular made the immediate application of a ligature to this vessel necessary; after which, our learned inspector resumed, with no sign of emotion, the place which a glorious heritage has assigned him during this campaign, the post of honor and of danger.

It is eleven o'clock when we enter Cavriana, a miserable straggling village, whose ordinary resources have been still further reduced by the catastrophes of war. The imperial party could find but a single dwelling for their shelter on the night of the 24th, and this had been occupied until the last moment of the fight as the General Head-Quarters of the enemy. Thus, at an interval of a few hours, two Emperors had sat down under the same roof, at the same table, on the same memorable day, which was to determine for them fortunes so opposite.

Every one was, therefore, reduced to camping out under the walls of Cavriana, and my ambulance corps not being able by any mode of reasoning to claim an exception, I did as everybody else did. To cap the climax, a temperature of 84° in the shade soon changed our tents into sudatoria, in which it was impossible to stay, even flat on our backs. As for myself, I should never have been able to reduce to order the reports which the Surgeon-in-Chief and the Commissary demanded of me, but for the hospitality, not altogether disinterested, I imagine, of an old woman who lived near by. The presence of the soldiers evidently made her anxious for her back-yard, her mulberries, and her kitchen-garden; and she was probably not sorry to place her property, for the time being, under the protection of an *embroidered collar*. But to come to my report, of which the following is, in brief, the substance:

"Including three amputations of the thigh, performed immediately upon our arrival at Cavriana, among the wounded Austrians, whom we found laid under the galleries of a miserable guard-house, and whom for want of any other suitable premises, I was obliged to use my authority to quarter in the principal church of the village, the total number of operations performed at the ambulance station of the General Head-Quarters, from twelve o'clock on the

24th to the same hour on the 25th, amounted to forty-three. This number was composed of the following details :

<i>Amputations.</i>	{	Thigh.....	7
		Leg.....	4
		Arm.....	9
		Forearm.....	3
		Shoulder.....	4
<i>Disarticulations.</i>	{	Two fingers.....	2
		One finger.....	8
		One entire median phalanx.....	1
		One terminal phalanx.....	5
<i>Resections.</i>	{	Two metacarpals.....	1
		One phalanx.....	2
		Total.....	43

" 11 of these operations were done by myself;

7 by the Principal Medical Director, M. Leuret;

7 by Surgeon-Major of the 1st Class, Leroy;

2 by Surgeon-Major of the 2d Class, Lecomte;

2 by Surgeon-Major of the 2d Class, Jacquemin;

7 by Assistant Surgeon-Major of the 1st Class, Guiches;

3 by Assistant Surgeon-Major of the 1st Class, Riolacci; and

4 by Assistant Surgeon-Major of the 2d Class, L'honneur.

" Though administered indiscriminately to all these cases, chloroform did not cause the slightest accident. We must not omit to mention here its singularly variable results as regards the promptitude with which insensibility was induced, and the precursory phenomena of anaesthesia. While the wounded Austrians dropped, so to speak, asphyxiated, as if struck by lightning, on the first inhalation, the French, laboring under a high state of nervous excitement, entered, as soon as the effects of the chloroform began to be felt, upon a stage of most energetic contraction, extremely difficult to control, and quite impossible entirely to subdue. I was the more struck with this condition from the fact that I had never noticed anything of the kind in my administration of chloroform to the numerous wounded of the different expeditions of Kabylia, in Algeria, or among the Kabylans themselves. I ought to add, too, that privates were especially affected in this way, to the almost total exclusion of the officers.

" A single death followed immediately after the operations just enumerated. The case was that of an officer whose thigh was amputated very high up by M. Leroy, for a badly comminuted fracture of the femur. Forty-three other wounded men have died, the victims of lesions which grant little grace—those of the chest, of the head, and especially of the abdomen."

I have a few remarks to make touching the operative procedures which were employed. The circular method, offering a sure, simple, and generally easy manipulation, still remains the classical method, preferred by military surgeons. My object in performing

several amputations or resections, in the presence of our *confrères* of the General Head-Quarters, by means of a single anterior or lateral flap—with complementary circular section of the soft parts, in the cases of the thigh and leg—was especially to demonstrate the superiority of this mode of operating. More expeditious, inasmuch as it dispenses with the laborious dissection of a sleeve of integument, it assures regularity and a good degree of thickness in the stump; and it avoids the inconvenience of corrugated central cicatrices in the application of an artificial limb. Finally, favoring the prompt union of the soft parts, the mere weight of the flap bringing it down over the oozing surfaces, it prevents better than any other mode the projection of the bone or conicity of the stump. In the articulations of the extremities, take, for example, the shoulder, when the injury to the bone throws a doubt on the expediency of resection, what an advantage is gained by uncovering the seat of the difficulty by means of a large flap, and thus being able thoroughly to appreciate the extent of the wound, and with a complete acquaintance with its cause, to decide the operative indications dependent thereupon!

A unique case of haemorrhage, occurring at Castiglione in the case of an officer, a short time after the dressing of an amputation of the arm, necessitated the ligation of the humeral artery in the wound. Dr. Leroy arrived in time to remedy the accident, and the patient has recovered. Was this a case of loosening and dropping off of the ligature as it is conceived may happen from the effects of the jarring of transportation? Or should we rather suppose that in the hurry and excitement of an operation performed upon the battle-field, a false knot had been applied? A third supposition is that the brachial, temporarily obstructed by a clot or a plug of muscular tissue, may have escaped the thread of the operator.

Let me say, in passing, and without offensive allusion to any one whomsoever, the ligation of arteries, after amputations, should be regulated not by the jets of blood which present themselves, but by an exact anatomical acquaintance with the principal vessels of the region. If they retract themselves from the surgeon's sight, they must be patiently and persistently sought for.

How often have well-known arteries been supposed to be abnormal, rudimentary, or wanting, and yet given rise to secondary haemorrhage! I can cite an example of recent occurrence, the better as it concerns myself. Performing an amputation of the forearm, at the upper third, at San Martino, I was unable to discover the radial, nor was there any trickling from it. Wearied by fruitless searches, I at last decided to apply the dressing. In half an hour after it was dripping with warm blood. Removing the dressing, I finally succeeded in seizing my artery, which was oozing from the middle of a contracted and extremely dense fibrous envelope. I was obliged to cut through this in order to disengage the mouth of the vessel, which was deeply retracted. I ligated it, and the danger was over.

Besides the capital injuries which led to the amputations recorded above, I find in my notes as having been all visited and dressed :

- 8 fractures of the facial bones.
- 6 fractures of the thigh (amputation not performed).
- 2 fractures of the head of the humerus (amputation not performed).
- 1 fracture of the wrist (amputation not performed).
- 1 fracture of the tarsus (amputation not performed).
- 4 wounds of the head.
- 1 wound of the spine (lumbar).
- 2 penetrating wounds of the abdomen.
- 1 fracture of the leg (amputation not performed).
- 2 wounds of the bladder.
- 1 wound of the chest.
- 2 fractures of the forearm (amputation not performed).
- 1 wound of the pubes, with rupture of the urethra.
- 1 fracture of the hand.
- 1 wound of the larynx.
- 1 deep wound of the thigh, the projectile buried in the ilio femoral muscles.

1 triple wound of the left hip, the right thigh and the left elbow; this last, complicated with a comminuted fracture of the joint and a considerable loss of arterial blood, led to the immediate amputation of the arm in its continuity.

I. Wounds of the face, generally complicated with fractures of the teeth or jaws, imperatively demand the extraction of splinters of the first and second order; that is to say, those which are loose and those which are still somewhat adherent. To fulfill this indication properly, demands repeated examinations in the sinuses, the fleshy portion of the cheeks and the nasal fossæ under the tongue, and even into it when it is involved. When bony points protruding into the interior of the mouth threaten the safety of the tongue, or lead us to fear a subsequent interference with its functions, or deformity, they must be carefully resected. The difficulty is thus greatly simplified, and the duration, so tedious to the patient, of the foetid discharge of wounds bathed in saliva, much abridged. These little operations, after which the wounds in question should usually heal well and rapidly, were often complicated at Castiglionone with haemorrhages from the arterioles lodged in the anfractuosities and canaliculi of the bones of the face. The tampon not proving always successful in checking the flow of blood, we employed the persulphate of iron, which M. Monsel has proposed to substitute for the perchloride; our experiments are not yet sufficiently conclusive to enable us to pronounce definitively on the relative efficacy of this styptic. I give a few especially remarkable specimens of this kind of lesion.

A., a corporal in the 72d of the line, was struck under the lobe of the left ear by a ball, which, penetrating transversely and horizontally, passed out under the lobe of the right ear. I introduced

successively my finger and a female sound along the course of the projectile, and discovered that it had grazed the posterior columns and posterior surface of the velum of the palate and lacerated the tonsils. There was no haemorrhage nor a single splinter in this wound, which, when we consider the nature of the parts which surround it, was truly extraordinary.

M. M., a captain in the 11th Regiment of Artillery. The ball entered the middle of the lower lip and passed out behind the mastoid process of the left side. Destruction of the symphysis of the chin; extraction of a large splinter; haemorrhage arrested by the persulphate of iron.

C., 1st Zouaves, 3d Battalion, 4th Company; ball passing from the right commissure of the mouth to the middle of the ascending branch of the maxilla of the same side. Extraction of several splinters at the orifices both of entrance and exit. Removal of two teeth left entirely bare.

Captain S., of the Engineers—a ball entering under the symphysis of the chin, and passing out between the lower lip and the anterior surface of the corresponding incisors. The margin of the bone is cut and broken, without destroying the continuity of the inferior maxilla.

In the case of G., a private of the 34th of the line, the ball, before penetrating the superior maxilla of the left side, between the ala of the nose and the labial commissure, lacerated the cheek in such a manner that the face presents a hideous spectacle. After having washed the wound and removed all the splinters, Principal Medical Director Leuret proceeded to adjust the lacerated strips of flesh by means of interrupted sutures, and succeeded in accomplishing a very useful restoration of the lip and nostril.

II. The fractures of the thigh in which we thought it our duty to reject, or at least to defer, amputation, justified our attempts at conservative surgery, by offering the following conditions: 1st, Simple or slightly comminuted fractures of the thigh, with the surfaces of coaptation more or less irregular, but without marked deviation of the extremities from the axis of the bone, as is observed when there is crushing or splintering of the bodies; 2d, The immediate extraction of the splinters, which are loose or slightly adherent, and of inconsiderable size; 3d, The absence of grave complications, of haemorrhage, of foreign bodies buried in muscular regions, etc.; 4th, The ability to remove the patient to a short distance from the field, in order to apply promptly, and at the same time without subsequent removal, the local and general means of treatment which his condition demanded.

Such was the situation in the case of Col. S., chief of the Engineer Staff of the 1st Corps, wounded on the outer side of the left thigh, at its upper third, by a fragment of a *ricochet* ball, which was extracted at the moment of receiving the wound, under the form of a small metallic disc. Assuring myself by palpation that the fracture was very simple, I applied Scultet's apparatus, with Surgeon-Major Jacquemin's assistance, and the Colonel was imme-

ately carried to Brescia in his carriage, in which I caused a swinging litter to be arranged. All accounts received of him up to the present day promise a favorable union. Of the five others in the same category I have, as yet, no intelligence.

The official correspondence of the surgeons of hospitals in the interior of Italy announce to the Chief of the Medical Service of the Army, it is said, an altogether unlooked-for proportion of probable cures of fractures of the thigh, rescued from the harsh sentence of amputation. We earnestly pray that these facts, thoroughly verified and carefully registered, may prove so numerous and authentic that precise inductions may be drawn from them with regard to two points: 1st, The absolute curability of comminuted fractures of the thigh in armies; and 2d, The relative chances for the recovery of the patient with or without amputation.

III. Division-General L., of the 1st Corps, and Colonel M., of the 1st Zouave Regiment, were both wounded in the shoulder by balls. In the case of the first, the ball hollowed out a gutter along the external face of the head of the humerus. There seemed to me to be no complete fracture of the bone, only a splintering to a slight extent. I removed the loose fragments, leaving the other to the eliminative efforts of suppuration. The General has since received a ball in the right groin, which, making its way horizontally towards the left groin, glided between the integument and the muscles in front of the pubes, as far as the superior insertions of the femoral adductors. Neither the finger nor the sound can detect any thing at the end of this long tract, nor does any prominence or hardness denote the presence of the lead from without. The corresponding coxo-femoral articulation is free; there is no pain, no difficulty of locomotion. Nature's must be the care of preparing its ultimate extraction, by an inflammatory process, terminating in an abscess; unless, indeed, accommodating herself to the presence of a foreign guest, she preserves it by surrounding it with an isolating cyst—a termination sometimes observed, but of slight probability in this case, considering the great motility of the region involved.

Colonel B.'s wound is equally severe, and even more curious. This officer contracted the habit, during a tour in Sweden, of wearing a flannel vest lined with buckskin. The projectile, striking the prominence of the shoulder, passed through all the clothing except the lining of the vest, which, yielding under the pressure, followed the ball like the finger of a glove, without tearing, to the very centre of the head of the humerus. The fact of the lining being whole, and its peculiar situation, contra-indicated any search for the body which caused the wound. I could only recognize the good condition of the bone and the absence of crushing and splintering, and remove a few grains of osseous matter from the wound. Not only was an operation useless in my eyes, but I thought it my duty to forewarn the patient against any propositions of resection that might hereafter be made to him by others. The result up to

this time has justified my prognosis: the injury is being repaired well, and quite rapidly.

IV. I will cite farther, as attempts at conservative surgery crowned with success:

1st. The removal of the second and third fingers of the right hand, which I performed in the case of Commandant P., of the 5th Hussars, whose hand was horribly torn by a musket-ball. Beyond a small abscess in the palmar region, this wound, now under the skillful care of Assistant Surgeon-Major Miche, is daily progressing to cicatrization.

2d. The case of Captain P., of the 1st Regiment of Zouaves, whose cubitus and radius had been fractured by a ball passing over the posterior surface of the forearm. The sentence of amputation had been pronounced, and the wounded man, resigned to his fate, begged that the operation might be performed as soon as possible. Examination of the parts showed me a fracture double and comminuted certainly, but with a small number of short splinters, which could easily be extracted. Under such circumstances, what necessity is there for haste, particularly in the case of an upper extremity, where, with a little careful watching, secondary amputation will always find a timely indication?

3d. Commandant K., of the 72d Line, struck with a ball, which entered at the inner side of the articulation of the os calcis and the astragalus, and was extracted from under the skin of the dorsal region of the foot, against the external border of the cuboid. Numerous splinters were removed, resulting in the formation of a wide, free canal in the centre of the tarsus, having an inclination favorable to the escape of pus. Constant cold irrigation was employed. Its present condition is very satisfactory.

V. The extreme gravity of wounds of the skull, of the vertebral column, and of the abdomen, explains why we observe so few of them, in comparison to lesions of other parts of the body. They are, in fact, the wounds which produce immediate death most certainly.

Colonel B., of the 43d of the Line, presented a considerable loss of substance of the right parietal bone, with destruction of the *dura mater*, permitting the pulsations of the brain to be distinctly seen, in a portion of that organ, which protruded considerably through the opening. No symptom of paralysis or of compression for the first five days. On the sixth, acute encephalitis terminated his sufferings.

In the case of Captain B., of the 84th Line Regiment, who was struck with a ball full on the vertebral column, at the level of the eleventh dorsal vertebra, I witnessed hyperæsthetic phenomena of the most violent character. This unfortunate officer was instantly seized with paraplegia. Raising himself upon the bed which he occupied in the Civil Hospital, and writhing in the most agonizing sufferings, in his despair, he shrieked aloud for death. Inspection of the wound furnished no surgical indication of a nature to procure for him the slightest relief. The probability is, that the spinal

marrow was irritated by spiculae of bone, or by the roughness of the ball, altered in shape by striking the spine. Opium could scarcely bring momentary ease to the wretched man. He died after the expiration of several hours of fearful agony.

Lieutenant-Colonel B., of the 44th Line, pierced by a ball through the right loin, at the level of the kidney. The small intestine is implicated. Pressure and percussion reveal abdominal effusion. Vomiting on every attempt to drink his *tisane*. In the course of the evening peritonitis makes its appearance, and faecal matters appear at the orifice of exit, in the centre of a fungoid protrusion of omentum. Death after forty-eight hours.

VI. As an instance of a wound of the genital organs, I cite the case of Captain T., of the 15th Line. A ball struck him a little above the crest of the right ileum, and was extracted near the middle of the left groin. This long passage is fortunately subcutaneous for its entire length, but the penis must have been injured at its root. I question the patient, but he insists that he has lost no blood by the urethra; however, he has not urinated since receiving the injury. An exploring sound, introduced into the canal, stops at the pubes, where it enters a sort of *cul-de-sac*, (the track of the ball,) and immediately an abundant discharge of blood takes place through the catheter. I am ignorant as to what has become of this officer, in whom, be it understood, I allowed the sound to remain.

VII. General D. had his foot in the stirrup to mount, when he received a ball in the fold of the left buttock, which penetrated from behind forwards, in the direction of the pelvis. On his arrival at Castiglione I examined the wound, and my finger, reaching the ischium, finds this apophysis denuded and rough. Has it been broken or pierced by the projectile? Has the bullet, which evades all our investigations, fallen into the pelvis, or, reflected by the tuberosity, has it changed its course and entered the fleshy mass of the abductors of the thigh? In any case, the sharp pains which shoot along the sciatic nerve, the depth of the lesion, the extent and irregularity of its course, and the fracture of the ischium—limited, as we suppose it to be—indicate, in our eyes, serious danger.

VIII. I shall not stop long to consider penetrating wounds of the chest, whose interest lies principally in the subsequent progress of the effusion. To speak of them, I should need to follow my cases for a long time—longer than is permitted me. But the following is an example, as sad as it is rare, of the terrible consequences which may ensue from a lesion of the upper part of the respiratory apparatus. A private of the 1st Regiment of Zouaves was struck in the neck by a ball, which destroyed the middle portion of the thyroid cartilage. Although the foreign body was extracted and the wound dressed in the usual manner, the air passing out forcibly by this opening penetrated the cellular tissue of the anterior cervical region. The œdema reached the glottis and the surrounding tissues. In vain are the parts explored; in vain do we attempt to free the trachea from its obstructions, and to re establish the

passage of the air by the introduction of a sound: the wounded man, unable to bear any interference, tore off every dressing, repelled every manipulation, and went off to die at the end of the ward in the most agonizing spasms of suffocation.

IX. A wound of the elbow, followed by amputation of the arm, in the case of a Corporal of the 74th Line, deserves to be reported, from the singularity of the projectile which caused the injury. This young soldier had the elbow-joint pierced through and through by the square stick of a congreve rocket, (more than a yard long and two-thirds of an inch thick) The most extraordinary part of it is, that this javelin remained implanted in the limb, whence he himself drew it, and made use of it as a cane to assist him in walking to the ambulance. On examining the joint after amputation, I pointed out to the assistants a quantity of fragments of wood firmly fixed in the articular cartilages, among the osseous splinters of the humerus.

X. One of the most interesting incised wounds of the campaign is, unquestionably, that of Lieutenant D., of the Mounted Chasseurs, who received a sabre stroke across the face at Solferino. The entire lobe of the nose, with portions of the cheeks, and a considerable extent of the upper lip, were detached. Being thus turned inside out, they fell, by their own weight, in front of the chin, leaving bare the superior dental arch, the anterior segment of which was separated, with its four incisors, two canines and one molar. A suture, very dexterously applied by M. N. Perier, Principal Medical Director, so perfectly adjusted the borders of this immense solution of continuity, that the external deformity is scarcely noticeable. The loss of a part of the palatine arch, indeed, interferes somewhat with articulation; but this difficulty can easily be remedied by the aid of an artificial obturator.

XI. Authors on military surgery have related such very extraordinary facts with regard to the inclosure of projectiles of a large size as compared with the region in which they have been found buried, that such observations, although bearing most trustworthy signatures, have with difficulty acquired a place in the annals of the art. I confess that, for my own part, I have never been able to divest myself of a certain amount of distrust in regard to them. It is not without a motive, then, that I call attention to the two following cases.

Captain P., of the Algerian Sharpshooters, (a temporary regiment,) had the first phalanx of his right thumb fractured by a ball. The bone is fairly pulverized. There is but a single cutaneous opening, situated on its dorsal surface, shaped like a button-hole. Parting its lips, a metallic surface, apparently that of a fragment of a bullet, is perceived. Surgeon Major Leroy proceeds, in accordance with my advice, to extract the broken phalanx, preserving the phalanget, as well as the flexer tendons, intact. To our great surprise, when the fragments were removed, he drew out from the bottom of the wound a large conical ball, entire, and scarcely at all flattened.

General A., of the Artillery, was struck on the morning of the 24th by a ball, which shattered the left shoulder. He was brought to the ambulance of the headquarters of the 2d Corps. The shock was excessive, and the loss of blood considerable; the nervous system so much depressed that any operation which would be attended by further haemorrhage was considered dangerous before the commencement of a healthy reaction. On the following day his condition seemed favorable for the removal of the humerus, which was literally ground to dust. The articulation having been laid open, together with the anterior axillary region, the surgeons found, upon reaching the bottom of the wound, an *entire six-pound shot,\** so tightly imbedded between the infra-scapular fossa and the ribs, that it was with difficulty removed.

It was my sad duty to receive the General at Castiglione after the operation, and to bestow upon his desperate case all the attention called for by a terrible injury, and sympathy for a great man. But the shock sustained by the economy, the severe compression of the tissues by the forcible entrance and prolonged lodgment of a hard and heavy body, left but a small chance for the skillful operation of our colleague, M. N. Perier. Stoically resigned to the sacrifice in which his heroism had staked his life, the General yielded, on the 29th of June, to the fatal grasp of the gangrene which had attacked the wound. Not far from the bed of suffering, we could, all of us, see the projectile, brought from the ambulance by eyewitnesses of the operation—a glorious relic, coveted by curious science, but not likely to be long left in its possession by the pious veneration of family and friends.

I stop, my dear friend, for I feel that interest begins to flag—if, indeed, it has not too long since done so—in this necessarily barren sketch of so many pathological cases, so hastily observed. Such, however, is the characteristic physiognomy of military surgery; active, extemporaneous, adventitious, like the abrupt, rapidly-succeeding, and unanticipated events on which it depends. In the camp, the recollections of last night, even the impressions of to-day, rapidly vanish, ruthlessly pursued by the necessities of the hour and preparations for the morrow. While I have been trying, at twenty several sittings, interrupted on all sides, and in every possible way, to put upon paper a few commemorative outlines of this day of Solferino, a day of triumph for the army combatant—and not without honor, nay! glory, for the Medical Staff—the march of the army has brought us from Cavriano to the heights of Volta. Beneath us flows the Mincio, beyond which, the enemy, defeated less than a week ago, is preparing, they say, for our battalions a desperate resistance and new successes—for our ambu-

\* In my Fifth Letter, which appeared in the *Medical Gazette of Algeria*, September 30th, 1859, it is spoken of as an eight-pound shot. Such was, in fact, the first estimate that was given me of the weight of the projectile, which has no analogue in the French Artillery. I have since had an opportunity to verify this assertion, by weighing a similar shot, which I picked up on the battle-field of Solferino; its exact weight was 7 pounds, 4 ounces.

lances, new opportunities for zeal and devotion. I am right, then, you see, in hastening to bring my journal up to the times, and, the better to hold myself in readiness for coming events, to bring this colloquy abruptly to a close by subscribing myself, as ever,

Your very devoted and affectionate brother.

VOLTA, June 10th, 1859.

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### *Meeting of the New York Pathological Society, June 25, 1862.*

#### SPONTANEOUS FRACTURE FROM CANCEROUS DISEASE OF THE BONE.

Dr. Sayre exhibited several bones removed from the body of a woman, aged forty, who entered Bellevue Hospital last October, with a fracture of the upper third of the left thigh, which she stated had been produced by an attempt to rise from her chair. Various appliances were used, but no union by bone resulted. She was compelled to keep her bed, and some two or three weeks since, in attempting to rise from it, fractured her left thigh just above the knee; also a few days previous to death, while attempting to move in her bed, her right arm was fractured near the shoulder-joint.

On post-mortem examination the left thigh was found fractured two inches below the trochanter major, and united by fibrous tissue. From that point downwards the bone was very much flattened and twisted upon itself, and at the lower extremity of the twist the compact structure was so much increased that the medullary canal was obliterated. The fracture of the left thigh was at the junction of the middle and lower thirds, and through an osteo-sarcomatous cyst, two inches in extent and half an inch in diameter. The fracture of the humerus, situated about an inch below its head, was also through a cyst three-quarters of an inch in diameter. The lower jaw contained one or two of these cysts. The specimens have been examined by Prof. Flint, jr., who failed to detect in them any evidences of cancerous disease. Dr. Sayre was inclined to think that the case was a simple one of *fragilitas ossium*.

#### CURIOS CASE OF MALINGERING.

Dr. Sayre also presented a few specimens of coal removed from the skin of an imposter, and gave the following history of the case:

Miss Purdy, aged thirty-seven, of Oneida, N. Y., of highly respectable parentage, of the ordinary stature and build, but of nervous temperament, was brought to the city a few days since by Dr. Perkins, who has been her constant attendant for the past four years, and a Mr. Wilcox, in order to get the opinion of the medical profession on the case, which they stated had baffled the skill of all the doctors in the western part of the State.

The Dr. states that she menstruated at the age of fifteen, and continued regular until about the age of twenty-two or twenty-

three, when she became irregular, and her general health impaired; about this time a peculiar secretion of black and thick crusts began to form on her face, and finally extended to the arm and hand of the left side, and also on the leg and foot of the same side.

This secretion at first looked like dark blood in spots, but soon extended over larger surfaces as described, grew thicker and blacker, and in a few months was perfectly dry and black like a mummy, when it would peel off with great pain, leaving the skin healthy but stained, and in a short time would be reformed.

During all this time she was watched carefully by her sister, mother, aunt, and other members of the family, and had the advice of some sixty different physicians, none of whom, as he states, could diagnosticate the case.

All the family and friends with whom I have talked unite positively in asserting that during this time, fourteen years, she has not had her bowels moved once, and has passed no water from her bladder except once or twice, when it was drawn off about four years since. For the last four years she has been under the constant care of Dr. Perkins, who states that she has not passed a drop of water from her bladder, or faeces from the rectum, in that time; and that she has neither bladder nor rectum, but that both of these organs terminate in the vagina, from which he has been compelled from time to time to remove large quantities of charcoal, varying in size from two inches in circumference to four and five in length. The amount which he exhibits is several quarts.

Five or six stones are also exhibited as having been taken from the same place (the vagina).

He has also a quart or two of smaller pieces of charcoal, about an inch in length and half an inch in width, which she has vomited at various times, all of which are smooth and polished, whereas the others from the vagina are irregular and rough.

She eats well and digests without difficulty, and he thinks the coal and stones are secreted in the system and from the skin, and has brought her to the city for the profession to examine her as a most remarkable pathological phenomenon. I saw her to-day, in company with Drs. Valentine Mott, Carnochan, Parker, Watts, J. R. Wood, Jacobi, B. F. Barker, Austin Flint, jr., A. B. Mott, and Livingston.

Her pulse was eighty-two, respiration a little hurried, heat natural; the mask had just been taken from her face, which was slightly stained in spots with charcoal; a large piece of coal was in the vagina, which I broke in removing; at the same time I did this I put my finger in the rectum and distinctly felt the orifice of the urethra, proving that there was both a bladder and rectum.

The mask was cut off from her arm and foot with a pair of scissors, and proved to be made up of cloth, wool, and glue of some kind, and covered with charcoal, leaving the skin underneath perfectly healthy, and thus unmasked the villainy or ignorance of the pretender who brought her to the city for public exhibition.

Dr. Clark stated that he had seen a patient in the practice of

Dr. Dubois who he believed did not pass any urine for nine or ten days, but in its stead large quantities of uric acid and triple phosphate in an almost pure state.

Dr. Conant alluded to the case of a girl who lived till she was thirteen years of age without any bladder or urethra. She was in the habit of passing a substance from her umbilicus which contained uric acid and other ingredients usually found in the urine. Dr. C. also referred to a case in the practice of Dr. Mussey, of Canaan, where it was the practice of the patient to pack away sheep's bones in the vagina with a view to obtain pity from the credulous.

Dr. Post stated that he had removed about two hundred pins and needles from the vagina and bladder.

Dr. Sayre remarked that Dr. Wood had in his possession nearly a quart of brickbats which were removed from the vagina and urethra.

#### DISSEMINATED CANCER.

Dr. Clark presented a specimen, and remarked upon it as follows:—

A woman was received into Bellevue Hospital some time in April, with double pleurisy and a little abdominal effusion. She was forty-one years of age, and enjoyed pretty good health until three months before. We attempted the cure of the pleurisy in the usual way, by the application of blisters and diuretics, but accomplished nothing. The woman rather suddenly and unexpectedly died, and at the post-mortem examination we found that the pleura covering the lungs and lining the walls of the chest, and also the surface of the peritoneum, were dotted all over everywhere with small flattened shining white deposits of a cancerous character, and that there was no accumulation of cancer in any other part of the body. The whole interest of the case consists in the fact that this woman had disseminated cancer without any accumulation sufficiently large to be fatal, or sufficiently large to affect any organ in the body except by irritation.

#### CANCER OF THE STOMACH, ETC.

Dr. Clark also presented a stomach which was the seat of a very grave disease. Here, sir, is a large tumor somewhat in the form of a polypus, the neck being of moderate size, and a tumor as large as my fist, perhaps a little larger, in the same stomach. I should remark that that is on the posterior and inferior portion of the stomach, at a point almost exactly opposite the opening of the cardiac orifice. Between that and the pyloric opening is a large patch of similar disease that has undergone pretty extensive ulceration. The coats of the stomach are enormously thickened in many situations, and particularly in the situation of this last deposit. The tissue of the stomach itself in other portions has undergone what appears to be fibrinous degeneration, so that the thickness is more than half an inch. Outside of the stomach and against the liver

is a deposit of a similar material, softer than the morbid matter found in the stomach, I mean the tumors. The stomach is adherent to the liver, and at one point on the inferior surface of the liver there was a little pus found—only a very moderate quantity. The interest of the case consists in this: the difficulty of making a correct diagnosis of the condition of this person during life.

His age was about thirty-five. He complained of no illness until February last; then he had a little vomiting, some nausea, and felt a puffy tumor to the right of the median line, in a position which might correspond to that part of the stomach moderately enlarged. His history from that time until his admission into St. Luke's Hospital is very meagre indeed. He gradually became emaciated and exceedingly pale. He vomited from time to time, but not regularly; there would be many days when he would not vomit at all. The vomiting was not from the mere food in his stomach, but from the irritated condition of the stomach independent of it—two or three times he had coffee-ground vomiting, which is characteristic of ulceration of the stomach from whatever cause. It was noticeable that the stomach refused to admit more than an ounce or two of fluid food at a time. When I saw him a few days before his death there was a movable tumor distinctly felt a little to the left of the epigastrium. I could distinctly appreciate its size. There was a tympanitic ringing as if from the stomach most of the time in the neighborhood of the tumor, and part of the time over it.

It was stated that the tumor was larger than when I saw it a (week or ten days ago if I remember correctly), and at that time the man had a very profuse vomiting of a material that was regarded as pus, and that he had a diarrhoea, the characteristic feature of which was, in the view of the physicians in attendance, purulent discharges. It was stated that after that the tumor diminished very much in size. It is plain that the true tumor could not have diminished after that, as it appears at the post mortem examination that the stomach was very large, and as its walls were very much thickened it would undoubtedly stand out and make the tumor appear larger than it naturally was. I should remark that when he first came under observation at St. Luke's, there was a little puffiness of the hands and a little oedema of the feet. We had the urine examined, and it was found slightly albuminous. The point of interest in the examination was this—Was this an abscess or was this tumor merely a thickened membrane that bounded the abscess or cancerous mass. Opposed to the first view was the fact that it was movable, easily movable for an inch forward and backward—the walls of the abscess in this position were almost always pretty firmly attached to the walls of the abdomen if near enough to touch it. I could hardly suppose that that was the diagnosis, yet the opinion of the physician who saw it was confidently in favor of it. Then the question was—Was it a malignant tumor and did it produce suppuration behind it to furnish all this pus? That seemed more likely; but when we come to the post-mortem

examination we find that there was no place where pus could collect in any large amount. This material, then, which appeared to the physician in attendance to be purulent matter, must have been a secretion from the stomach or effusion from the mucous membrane itself.

The form of this disease as it appears from the examination of Dr. Watts, jr., is compound. The grey thickening of the stomach is made up, as he ascertains, mainly of hypertrophied fibrous tissue; but in the midst of the fibres he finds large cells with large nuclei, and such as he figured to me I am satisfied are of a cancerous character. I find also in that large flat tumor the same material, fibrous matter, in considerable quantity, and these large cells with large nuclei in considerable abundance. But in the polypoid tumor this material is quite different. In the flat and ulcerating tumor there are abundance of enlarged follicles tubular tissue which is the exaggeration of the follicles of the organ. The large mass appears to be made up mainly of a few fibres, vessels, and nuclei cells—such forms of cancer are often found in the brain, and are of very rapid progress.—*Amer. Med. Times.*

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*Army Mortality.*—The reports of the health of the Prussian army have been recently published. They show that in that army only 1 died out of every 144, being barely 70 in every 10,000 men. This includes suicides, accidents, and invalids. Without the former two classes the mortality was 1 in 166; and deducting also the invalids, 1 in 187. According to the locality, some remarkable differences in the mortality are pointed out. Thus the 1st Army Corps, which was in the Province of Prussia, lost 1 in 91 in the year 1860; the 8th Corps, in the Rhine Provinces, lost 1 in 289 in the same year, or less than one-third of what the 1st Corps lost. The like difference is said to be habitually found in the bills of mortality of the population of those two districts of Prussia. The mortality in the other European armies is stated as (in 10,000 men), in the Russian, 390; Austrian, 280; French, 190; Piedmontese, 160-170; English, 150; Belgium, 143. Then comes the Prussian army, the Danish and Saxon armies being about on an equality with it in this respect. This comparison is accompanied by the remark that a very short term of service has probably a tendency to diminish the rate of mortality in an army.—*Lancet*, Aug. 30, 1862.

## Bibliographical Notices and Reviews.

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*A Practical Treatise on the Diseases of the Heart, and great vessels; including the principles of Physical Diagnosis.* By WALTER HAYLE WALSH, M.D., Fellow of the Royal College of Physicians, Professor of the Principles and Practice of Medicine and of Clinical Medicine in University College, London, etc., etc. A new American from the third Revised and much enlarged London Edition. pp. 490. Philadelphia: Blanchard & Lee.

The present edition of this work has been carefully revised; much new matter has been added and the entire work, in a measure, remodeled. The chief additions relate to the practical portions of the book. Several affections of which little or no account had been given in the previous editions, have been treated of in detail.

The work is divided into Two Parts. Part I, relates to *Clinical Physical Examinations of the Heart and Blood vessels.*

Part II, *Diseases of the Heart and Great Blood vessels.*

The book is very much after the fashion of other treatises on the same subject. Perhaps it is a little more technical and deals more extensively in details.

There is still some trouble among physiologists as it regards the *sounds of the Heart*, and until this question is settled doubts will hang around the department of diagnosis. In regard to the FIRST sound the author simply reiterates the old notion, that several causes are concerned in its production; as 1, the sudden tension of the auriculo-ventricular valves; 2, the attrition of the blood-elements *inter se* within the ventricles; 3, the impingement of the blood projected from the ventricles against the orifices of the pulmonary artery and aorta; 4, the impulse of the heart's apex against the side or against the lung substance if this be interposed; 5, the attrition of pericardial surfaces accompanying systolic movement.

While, perhaps, the greater number of physiologists look upon the above agencies as sharing, to a greater or less extent, in the production of the *first* sound, Dalton, Audry and others, think it dependent entirely on the tension that is suddenly produced of the auriculo-ventricular valves.

From the following it is very obvious that the author wishes to qualify his views to some extent:

"Before considering the claims of these different agencies, as productive of the *first* sound, let me remind the student of a very obvious truth commonly ignored or forgotten by writers on this question, namely, that sound or noise may be caused at the period of systole by many actions which, nevertheless, take no part in producing the first sound. It might be again, that such superadded actions produced sounds, which sounds were habitually audible at the precordial surface, or on the contrary either constantly or occasionally drowned *in transitu* thereto, either by the superior intensity of the true first sound itself, or by interfering vibrations."

Those who have the inclination to allow the mind to dwell on the agencies alledged as being concerned in the causation of the first sound, and who are actuated by the belief that our knowledge of certain heart diseases must be very imperfect until something is definitely known, will see need for close sober thought. It simplifies very much to say that the *first* sound is due entirely to the tension of the mitral and tricuspid valves. But it does not satisfy. For while this is going on, or in other words, synchronously with the tension of these valves, is the muscular action of the ventricles, the rush of blood through the arterial orifices, the tilting up of the apex of the heart against the side of the chest, the collision between particles of blood from systole of ventricles, etc., and as all of these movements are capable of soniferous phenomena, it looks rather unphilosophical to exclude them from a participation in the production of the sound. Moreover, experiments show that the apex of the heart against the chest produces a sound similar to the first sound; and also that the rush of a column of blood suddenly against the mouth and sides of a tube will occasion a soniferous result not unlike the sound in question.

In view of such facts we feel very much like sticking to old notions until the evidence is very full against them. It may be that the tension of the auriculo-ventricular valves figure most prominently in the production of the sound in question, but not exclusively, so we think.

In regard to the *second* sound there has been quite a tendency to accept the explanation of Sir R. Carswell, that it is due to the tension of the sigmoid valves. The proof of this view consists in the introduction of a hook that holds the valve up against the side of the artery, the second sound ceasing immediately on the performance of such an operation.

Now, notwithstanding such an experiment seems conclusive, it should be borne in mind, nevertheless, that simultaneously with this action of the semi-lunar valves, we have other movements of the heart; as the diastole of the ventricles and rush of blood into their cavities; the sudden recession of the heart's apex from the chest-walls; the abrupt fall of the auriculo-ventricular valves to the sides of the ventricles, and the arterial systole from the presence of the blood in the arteries.

We find in this volume a very well-matured chapter on *Cyanosis*, or as sometimes called *morbus cœruleus*. The disease is classed among the malformations of the heart, attended with symptoms. The symptoms are discoloration of the tegumentary membranes, especially the skin, and the discoloration may be referred to two main types, *blue* and pale claret. The blue color ranges between various shades of light or dark leaden, purplish or almost black. The claret may be very light, or of the deepest shade that is ever seen in *post mortum* vibices or in even rubeola nigra.

While the discoloration obtains more or less over the entire surface, the maximum is seen on the lips, nose, tips of finger and toes. The tint generally deepens with violent exercise, strong emotions, or, indeed, any cause disturbing the equanimity of the organism.

The temperature of the surface is below the normal standard; and the patients are prone to chilly sensations. The function of nutrition being impaired, the muscles are flabby and the deposits of fat scanty.

Cyanotic children have an old expression of the countenance, and are indisposed to the common amusements of children of their age.

*Malformation* of the heart is the essential condition of cyanosis. This malformation, among other things, consists in an open state of the *foramen ovale*, constriction of the orifice of the pulmonary artery, hypertrophy of the right ventricle. Connected with these alterations is a systolic murmur of pulmonary constriction heard in the vicinity of the second left cartilage. Cyanotic murmurs are sometimes quite loud being heard at some distance from the body.

This disease is not always congenital. Of 101 cases, 74 were noticed shortly after birth; 15 appeared before the end of the first year, and the remaining 12 at various periods, from *ætatis* 1 to 14. In a total of 71 Stille gives 40 congenital, 31 non congenital.

We insert the following from the work :

"It has been suggested, by different classes of theorists, that when cyanosis is non-congenital, and attracts notice for the first time in early childhood, enlargement of the heart gradually opens out the foramen ovale, and so induces the intermixture of venous with arterial blood; or that congenital constriction of the pulmonary artery increases. In the adult, the appearance of cyanosis has sometimes been apparently traced to a blow, a fall, or an effort; possibly some forcible separation of the edges of the foramen ovale had occurred; sometimes ulcerative openings in the auricular or ventricular septum have seemingly proved the immediate cause. Occasionally the external evidences of the malformation have been but slight, until the accidental occurrence either of endocarditis or of serious bronchial or pulmonary inflammation; the mechanism in these two cases is, of course, different.

"Once established, cyanosis, as a rule, to which there can be but few exceptions, remains a permanent condition, though its exact amount may vary from time to time. Dr. T. Fox ably argues, on the evidence of the following case, that cyanosis may, under special circumstances, be temporary. A child became very darkly cyanosed on the eleventh day after birth—no other cyanotic symptom existed, and no abnormal sound was detected at the heart. In forty-eight hours the intensity of the discolouration had yielded; in a week no trace of it remained, its disappearance having been attended with the changing hues of ecchymotic absorption and slight jaundice. Dr. Fox tenders the following explanation: the ductus arteriosus and foramen had become on the eleventh day, that of the appearance of the discolouration, less and less patent—but probably advancing to complete close with less than usual rapidity. By the closure, first of the duct, then of the foramen, all the blood of the right side of the heart was compelled to travel through the pulmonary artery, which now presented some 'obstruction,' partly congenital, partly due to the lateness of the normal changes in the duct and foramen; after a little time the 'obstruction' was overcome, and the cyanosis removed.\* But if the postulated 'obstruction' existed, why was there no murmur; why were there neither dyspnoea nor cardiac distress? Jaundice, vomiting, serious haematuria, and, above all, extravasation of blood into the skin, shown by the changing hues of the haematin, as described, are strange accompaniments of cyanosis. Altogether the case is singularly mysterious.

"Laennic had a notion that cyanæmia in some measure antagonizes tubercle; Rokitansky, pushing the idea to extremes, has taught that cyanosis, like other states in which venosity of the blood predominates, 'offers a complete protection' against tuberculization. Several cases are on record, showing the fallacy of this doctrine absolutely stated;† what de-

\* *Med. Times and Gazette*, August, 1859.

† e. g. Louis, loc. cit., p. 313; and Fearnside, Association Journal, March, 1854. Dr. Chevers has collected thirteen similar cases (Pulmonary Artery, p. 136).

gree of antagonism, if any, really exists between the affections, has scarcely been submitted to statistical investigation. As far as such inquiry has gone, it tells wholly against the antagonistic theory; for Dr Peacock finds evidence of active tuberculization in 16.07 per cent. of cases in which the patient, having malformed heart and cyanosis, survived the age of eight years.\*

"Cyanosis seems to have some share of influence in producing pericarditis; but this point also requires further examination.

Bizot has shown, in refutation of an old idea, that the foramen ovale is somewhat more frequently closed in phthisical, than non-phthisical persons.†

"**MANNER OF DEATH.**—Death is usually of slow asthenic type, through imperfect haematoses—facilitated in many instances by pulmonary atelectasis, congenital or acquired, and emphysema. Or cerebro-spinal phenomena of congestive character may abruptly destroy life; serous effusions and visceral hemorrhages also hasten the fatal issue occasionally. These are almost essential effects of the disturbed condition of the circulation; but accidentally death may occur from almost all varieties of acute or chronic disease, in patients who survive the period of early childhood. In some instances the manner of death has not only distinctly been phthisical, but of ordinary phthisical type.

"**ANATOMY AND MECHANISM.**—The symptomatic state just described is known by experience to be connected with various malformations of the heart and perverted modes of origin of its great vessels. The general tendency of the more common of these malformations is to alter the relationships naturally subsisting between the two sides of the heart and the two kinds of blood—dark and florid. But some of the number act in other ways, and the entire series may be referred, as species, to three classes, as follows:—

"A. *Conditions permitting direct communication of the arterial and venous circulations.* (a.) *In the heart.*—Upon foramen ovale; congenital deficiency of part of the ventricular septum; acquired perforation, of ulcerative or other character, throwing the auricles, or the ventricles, or all the four cavities into, practically speaking, a single cavity; heart formed of one auricle and one ventricle, the latter giving off one artery, which divides into a pulmonary artery and aorta, &c. (b.) *In the great vessels.*—Freely pervious ductus arteriosus; aorta rising from both ventricles, or from the right ventricle, or from a trunk common to itself and the pulmonary artery, &c.

"B. *Conditions causing distribution of black blood almost solely to the systemic capillaries, and of red blood to the pulmonary capillaries, without, practically speaking, any intermixture of the two kinds of blood.* Here appear cases where the aorta rises from the right, and the pulmonary artery from the left,

\* Loc. cit., p. 137.

† Mem. de la Soc. Med. d'Observation, t. i. p. 360.

ventricle—the *venæ cavæ*, as in the natural state, communicating with the right, and the pulmonary veins with the left, auricle—where, consequently, there are two distinct circulations, communicating alone by the foramen ovale and ductus arteriosus, if (as is the rule) these remain open.

“C. *Conditions obstructing the entry of blood into the lungs or intensely congesting them, so as to prevent oxygenation.* (a.) *In the heart.*—Excessive smallness of the right ventricle; extreme narrowness of the tricuspid orifice: these states disturb the process of distribution of blood *to* the lungs. Great contraction of the cavity of the left ventricle, great coarctation of the mitral orifice; these conditions prevent the return of blood *from* the lungs. (b.) *In the great vessels.*—Partial or complete obstruction of the orifice of the pulmonary artery.

“Two different theories have commonly been urged in explanation of cyanosis as a dependence on these abnormal conditions:—(1.) The venous and arterial intermixture theory; (2.) The systemic venous stasis theory.

“(1.) The open condition of the foramen ovale lending itself to intermixture of the two currents, and, in consequence of frequently coexisting hypertrophy of the right auricle, facilitating flow from the right to the left side, rather than in the converse direction, seemed to afford a ready explanation of the dark tint. This theory of intermixture was long received without question; but against its exclusive adoption the following facts depose emphatically: 1. Free communication may exist between the blood-currents, as far as the existence of a widely gaping foramen proves this, without cyanosis. 2. Cyanosis has been wanting where there was but one ventricle, and where the aorta rose wholly from the pulmonary artery. 3. When cyanosis coexists with the anatomical conditions of intermixture, no direct ratio holds between the amount of discoloration and the freedom of communication. In a case noted by M. Louis, where the foramen only equaled a lentil in size, and the orifices and cavities of the heart proved free, more discoloration had existed than in another where the opening was much larger, and the pulmonary orifice contracted.\* 4. Ribes has related a case where the aorta rose from the right ventricle, and yet cyanotic symptoms did not appear until the age of three years. 5. Fouquier observes that foetal skin, though always circulating black blood, is not cyanosed.† 6. In the natural state the color of the skin comes of the different colored bloods moving in capillaries and venous radicles lying in close juxtaposition; the effect must be the same as if different bloods were mingled in the same vessels: therefore, as the former condition does not cause cyanosis, there is no reason the latter should do so.

“(2.) Morgagni started the opinion that cyanosis is really to be ascribed to systemic stasis in the venous radicles, arising from obstruction at the pulmonary orifice. M. Louis supports this view. He observes that the blueness of the fore arm, when ligatured for venesection, does not come of want of arterial blood, for this continues to reach the textures, but

\* *Communication des Cavites, &c., p. 344.*

† *Vide Appendix.*

from engorgement of their venous system. Stille, arguing in the same direction, notes more or less grave obstruction of the pulmonary orifice in fifty-three of sixty-two cases. Abnormal septum in the right ventricle, exercising a like obstructive influence, is attended with cyanosis.

"But this explanation, too, proves inadequate. For, 1. No direct ratio holds between the amount of cutaneous discoloration and the amount of narrowing of the pulmonary orifice. M. Louis has himself incidentally conceded this, as we have just seen. 2. This holds true, whether the pulmonary obstruction be acquired or congenital. Nay, more, a case observed by Dr. H. Roe shows there may be no cyanosis at all, from even great congenital contraction of the vessel. 3. How is this doctrine reconcileable with the fact, that the most intense venous obstruction, intra-cardiac or extra cardiac, but within the thorax, may occur without inducing true cyanotic discoloration? In the course of my experience I remember to have seen but one case of thoracic disease—the gravest example of emphysematous atrophy of the lung I ever observed—in which the tint of skin was fairly assimilable to that of really deep cyanosis.\*

"It stands, then, an unassailable truth, that the foramen ovale may be widely patent without the occurrence of cyanosis; so, too, the fact is equally well established, that the pulmonary orifice may be congenitally constricted to a high degree, and the skin be of natural color. But a satisfactory *tertium quid* may, I think, be moulded out of the two theories Grant that perforated septum and constricted pulmonary orifice coexist, and the occurrence of cyanosis becomes a certainty; on the one hand, the labor required at the right side of the heart to overcome the obstacle at the pulmonary orifice, forces of necessity venous blood through the foramen;† while, at the same time, the systemic venous stasis, resulting from the pulmonary obstruction, contributes to darken the tint. Probably, too, that tint will prove of the blue or of the claret variety, according as intermixture or stasis severally predominates.

"The effective power of intermixture, provided the venous quota be sufficiently large, is clearly proved by cases of transposition of the great vessels, such as that already more than once referred to. In this case the surface was permanently leaden-blue in tint, the only arterial blood reaching the systemic capillaries being that carried through the ductus arteriosus. No mechanical obstruction existed in the heart; but the hue grew notably darker under all dynamic influences, impeding the circulation

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\* *Vide Appendix.*

† If the pressure of the current on either side of the opening be equal, there is no reason why each current should not pass on without commingling at all, or more than very slightly, with the other. Such nicely-balanced pressure doubtless exists in those numerous cases of open foramen, unattended with cyanosis, where there is no constriction of the pulmonary orifice, and no dilated hypertrophy of the right cavities. It is almost self-evident that the admixture must be very free to modify perceptibly the color of the blood.

through the lungs. In this instance, too, a slightly corrective condition of the intense cyanæmia arose out of the relative calibre of the great vessels at their origin, as explained in the history of the case (*loc. cit.*, p. 12); and it appears to me exceedingly probable, analogous arrangements (as of the bronchial arteries, for instance), indirectly promoting arterialization, may exist in many cases without being detected.

"**CAUSES.**—Defective development of the heart is considerably more common in males than females; according to a calculation by Dr. Peacock in the ratio of 57.2 to 42.8. The explanation remains to be found. Malformation of the kind is sometimes hereditary. All physical defects in her offspring are invariably referred by the mother to influences, mechanical or emotional, occurring to herself during pregnancy; but there is no evidence approximating even to proof, that congenital vices in the heart are thus produced.

To foetal endocarditis may commonly be traced obstruction at the pulmonary orifice; certain valvular affections are similarly engendered during intra-uterine life. For the history of errors of development I must refer to works on Teratology.

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*Advice to a Mother on the Management of her Offspring.* By PYE FENNY CHAVASSE, M.D., Fellow of the Royal College of Surgeons, England, etc., etc., etc. Printed from the sixth London edition. New York: Bailliere Bros., Publishers, 440 Broadway. 1862.

This is the seventh edition of, in our opinion, an exceedingly valuable little book. We are aware there is in the minds of many persons a well-founded prejudice to books on domestic medicines; and, generally speaking, works written by professional men, for popular use, have failed in their objects. Attempting too much, they have not accomplished anything good, or have even fostered a spirit of presumptuous quackery. It has frequently been said, that it is emphatically true in medicine, that a little *knowledge* is a dangerous thing: we do not believe, however, that a little knowledge is half as dangerous as a great deal of ignorance. It is the ignorance that is dangerous, not the knowledge.

On every subject that is vital to the well-being and health of our fellow creatures, too much light cannot be shed; and we do not know of any means better calculated to dispel ignorance and neutralize error, than the dissemination of such books as the above among the reading class of the community. What physician but appreciates the immense difference between rendering medical services in a family where he can get his statements from an intelligent, observ-

ing mother, and depend upon her in carrying out his treatment in resisting the inroads of disease, and that of being thwarted and baffled at every step by officious intermeddling ignorance, or timid, credulous superstition?

As custodians of public health, we believe it is the paramount duty of all medical men to enlarge, as much as possible, the sphere of knowledge among all classes of persons on all subjects which relate to the preservation of health, and especially as regards the periods of infancy, childhood and youth.

What mother, after having passed through the suffering, trials, and anxiety of rearing a family, can look back with any degree of composure on the frightful degree of ignorance with which she entered upon the responsible duties of matrimony? Happy, indeed, if she has not to reproach herself with being the innocent cause, either through neglect of timely assistance or presumptuous interference, of sacrificing some one of her cherished offspring! Ignorant of everything which relates to proper management of children, it seems to be taken for granted that instinct and affection will supply in the mother all the knowledge that is necessary on a point so vital to the welfare of the human race. This little book of Dr. Chavasse supplies, in our mind, a great desideratum; he has rendered to the mother and her offspring services of the highest importance, and in a style so simple and so easy, that it appeals directly to the heart, and so free from technicalities and obscurity, that it is scarcely possible to misapprehend his meaning. Its range of subjects is quite comprehensive, embracing all that relates to the hygienic and much of the medicinal treatment of the periods referred to. We have given it a very careful examination; its teachings are sound and every way judicious. The style is conversational, and comprises answers to over three hundred interrogatories, to nearly all of which every conscientious mother, who properly appreciates the relation she sustains to her child, should be capable of giving an intelligent answer. We bespeak for it a wide circulation.

COLUMBUS, December 25, 1862

R. M. D.

## Editorial and Miscellaneous.

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THE NEW YEAR.—The New Year has come, and it finds us in a condition not very favorable to scientific research, or even close thought. The enterprise in which the country is engaged is absorbing the attention of the nation, and all stand spell-bound with astonishment at the phenomena of the hour. The history of modern times contains nothing, except the Crusades, that compares with the effort before us. In view of our *past* history, who can help thinking of the Roman maxim—*Tempora mutantur et nos mutamur in illis?* And with regard to the present, how pertinent the sentences, “Watchman, what of the night?”—“When will the morning appear?” How many the changes from our former happy state! How unnatural our present condition, for sensible people!

With regard to the Medical profession a few things may be noted.

The New Year finds not many Medical Journals in existence. Pretty much all published in the Southern States have been suspended. Indeed, we are not aware of the existence of a single one at the present time in any of these States. In the free States things are not much better. Fully three-fourths of the journals have also been suspended, including some of the ablest. Pretty much the same fortune has attended the Medical Colleges of the Southern States. We have not heard of one of them being in session the present season, though it is probable that those of South Carolina and Alabama are. Our Colleges at the West have not suffered. At the East, where the classes were derived in large proportion from the Southern States, there must be a falling off.

The New Year finds the medical men of the country engaged, in large numbers, in a new field of labor. Some three thousand or more have gone to the war, and are now, we hope, studying the diseases that result from crowding men together, and the wounds of battle. Medical literature ought to be enriched by the labors of these men, and it will doubtless be. We should, however, hope for more had the status of qualifications been higher and the organi-

zation better. In such a number there are, nevertheless, some with sharp eyes and earnest hearts, and to these we must look for the improvement of opportunities.

Of our periodical it may be said, it has just completed its second septennial period. It now enters upon its third, with the intention of making an effort to weather the storm that has swept so many enterprises of the kind by the board. For the last year we have freighted it down pretty well with records of the Army, and our policy during the next year will be, to continue in about the same line. Those, therefore, wishing something of a history of the momentous times through which we are passing should preserve their files.

For the last eight years we have been connected with the editorial department of the Journal, and during that time our aim has been to supply our readers with the truth, or the next best thing to it. Medicine is neither mathematics, nor is it poetry. It is a compound of experience and logic. A small brain-pan will do for the Mathematician or the Poet—strength at a particular point being all that is needed. For the Physician things are different. His work requires the mental caliber to be on the largest scale. What others have seen and what he himself has seen, before becoming available, require to be filtered over a number of times, and afterwards boiled down right smart, and, even after these processes, there will still be found a good deal remaining, "insoluble in alcohol," as the chemists would say.

Towards speculators, notoriety-hunters and innovators, classes who claim the right to sleep with the worthy members of the profession, our pen has been plain and positive, but respectful.

Some eight years since, in our Salutatory to the readers of the Journal, we remarked that we should have but little to say about "Quacks," for the reason that argument or ridicule directed against them has but little effect. The former they do not understand; the latter is construed into persecution.

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*Surgeon-General's Report.*—The annual Report of the Surgeon-General of the U. States Army has been laid on our table. The report is for the fiscal year ending 30th June, 1862.

The receipts from all sources, including appropriations, . . . . .	\$2,445,894	89
Expended, . . . . .	2,371,113	19
Leaving in the hands of disbursing agents, . . . . .	\$74,781	70

A Report on the sickness and mortality of the Army has been found impracticable at the present time, the vast amount of labor incident to the task being too great.

A statement of General Hospitals is submitted, and also the number of patients according to the latest returns.

The number of General Hospitals is thus seen to be 150, and the total number of patients in them 58,715.

The absolute number of sick in the Army is set down at 70,000. After the battle of Antietam, it was over 90,000. Perhaps now, since the battle at Fredericksburgh, the number will reach 100,000.

We have no means of knowing the number of our Army at the present time. But supposing it to be 1,000,000 in service, a very liberal calculation, the sick list would be 10 per cent., not a very high rate.

The author of the Report congratulates the country on the general health at present, and the exemption during the season from epidemics of a severe character. The troops, in large number, have been exposed to the southern climate during the summer and autumn, and but few cases of yellow fever have occurred.

From July 1, 1861, to June 30, 1862, applicants for appointments in the Medical Staff of the Army were invited by the Secretary of War. Sixty-six presented themselves. Thirty-three of this number were approved, and five rejected; the remaining twenty-eight withdrew. Before the same Board, eleven Assistant Surgeons were examined for promotion, nine of whom were found qualified. The standard of attainments required had to be lowered, and in New York, where the Board examined candidates for Brigade-Surgeons, the examinations dwindled into a mere farce.

The author of this Report insists on the establishment of a permanent Hospital and Ambulance Corps, composed of men especially enlisted for duty in the Medical Department, and properly officered, who shall be required to perform the duties of nurses in the hospitals, and to attend to the service of the ambulances in the field.

The increase of the Medical Corps of the regular and volunteer

forces is suggested. The deficiency applies to Cavalry and Artillery Regiments, and also Hospitals, that now have to be supplied by the employment of "contract" physicians. It is therefore recommended that the Medical Corps of the Regular Army be increased by twenty surgeons and forty assistant surgeons, and the Staff Corps, of volunteer medical officers, by fifty surgeons and two hundred and fifty assistant surgeons.

An *Army Medical School*, in which Medical Cadets and others seeking admission into the corps could receive an education fitting them more completely for the performance of their duties, is recommended. We see great propriety in this, whether we are to become a military nation or not. The present trouble found us sadly in want of those competent to the medical or surgical emergencies precipitated upon us with so little warning. Some one of the schools now in existence might take up the department of Army Medicine at once.

The establishment of a Laboratory, from which the Medical Department could draw its supplies of chemical and pharmaceutical preparations, similar to that so successfully carried on by the Medical Department of the Navy, is recommended as a measure of both utility and economy.

At the present, recruits are received into the service at the age of eighteen and upwards. The author of the Report thinks that youths of eighteen years are unfit for the service. They break down, become sick, and are thrown in the hospitals. He therefore suggests that the minimum be fixed at twenty years.

If, now, physical development is what is required, the youth of twenty years of age does not come up to the standard. A man's bones, the foundation of the whole organism and the parts concerned mostly in locomotion, are imperfect until the age of twenty-five. Until this period, indeed, the bones are in a measure *soft*, and the epiphyses easily injured. So, then, twenty-five is the age most suitable for recruits.

We here take leave of this Report, with the single remark that it seems to have been made on the presumption that henceforth we are to be a military people; that the 80 years' nap we have taken has rested us sufficiently, and that we must now take off our coats and go to work at our natural occupation—war!

*Spall-pox.*—This disease is more prevalent just now in our city than it has perhaps ever been since the city was settled. Fortunately, there is but little primitive material for it to operate upon. The population has been very generally protected by vaccination, and, as a consequence, a very large proportion of the cases occurring are *varioloid*. The unmodified form of the disease has proved in our hands very malignant. We have seen no case, however, of varioloid that terminated fatally. Perhaps in our next number we will give the result of some observation made on the disease during the past summer at the Pest-house near this city.

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*Camp Fever—Its Prevalence.*—A surgeon of Ohio Volunteers, of some considerable experience, stated to us that camp fever is very common in the Army. It passes, according to this surgeon's testimony, through every regiment, occasioning a greater or less amount of mortality, and is the principal cause of inefficacy of the troops, though, as a general rule, the type of the fever is not malignant. It has been supposed that diseases of the class of camp fever ought to be avoided, and that when general they go to establish the existence of gross carelessness. Perhaps such a view requires some modification.

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*Death of Sir Benjamin Brodie.*—For our previous No. we prepared a notice of the death of this distinguished man, which took place at his residence, at Surry, during the month of October last, but it was crowded out. The deceased was a remarkable man. He was a physicist as well as a physician, and had a moral constitution of a very high order. His labors relate to medicine, surgery and physics. The last work, we believe, from his pen was that entitled "Mind and Matter," a very clever one too. The reputation of Sir Benjamin, like that of Boerhaave, was world-wide.

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*Dislocation of the Hip Reduced by Reid's Method, after being out eight days.* By W. H. DRURY, M.D., Columbus, Ohio.

An Irishman, ætatis 30, quite muscular, a shoemaker by occupation, on climbing over a fence, a few weeks since, fell and dislocated

the femur at the hip joint. Surgical assistance was not obtained for a day or two after the accident. When first seen the case was diagnosed to be a luxation into the obturator foramen. Chloroform was administered, and attempts made at reduction, without any success, however, further than to change the head of the bone, as was supposed, from the obturator foramen to the dorsum of the ilium. On the *eighth day* another attempt was made, and, with the assistance of Dr. John Dawson, the luxation was reduced by "*Reid's Method*." Previously to commencing the operation, the patient was placed completely under the influence of chloroform, so completely, indeed, that a limb could be raised up and let fall without the least notice being taken of it by the patient. The manipulation by which the reduction was accomplished did not occupy more than thirty seconds. The ankle was taken hold of with the right hand and the knee with the left. The leg was flexed upon the thigh, and the thigh upon the abdomen, and thus carried slightly across the median line. The second movement consisted in abducting the knee, carrying it out sufficiently to bring the head of the bone over the acetabulum. A slight pressure downwards on the knee was next made, when the bone slipped in its place.

This case is reported, because, as far as I know, it is the first one that has occurred in this city in which the new method of Reid has been tested, and because of the complete success attending it. A dislocated femur is a formidable affair in any one's hands. The old method of reduction by the pulleys is tedious and dangerous, and not always successful either. The method of Reid, when the manipulation is comprehended, is speedy and safe, and our little experience with it inclines us to believe that too much has not been said in its favor.

I would suggest that the patient be placed upon the floor, instead of on a bed or table, as this is very much the best position for the operator.

"*Reid's Method*" is not new. It has been practiced a good while ago by several surgeons; but Dr. Reid, of Rochester, New York, is entitled to the credit of explaining it and showing its superiority.

DEPOT OF PRISONERS OF WAR,  
(near Sandusky, Ohio),  
January 1st, 1863. }

SIR : Thinking you might be interested in the Geology of this location, I will endeavor, as briefly as I can, to give you a few facts in relation to it. A very important chapter in the earth's history is written in the limestones here ; and this must become classic ground in American Geology. These islands are becoming favorite summer resorts, and the intelligent tourist will look with interest to any thing said in interpretation of the rocks below him. A very little attention to the dips of the different formations which come to the surface in Ohio, will be sufficient to determine the relative position and age of these limestones. The blue limestone which comes to the surface at Cincinnati is the lowest and oldest in Ohio. The grey limestone at Dayton and Springfield rests on the blue, and is the next in age. Following the dips, which are eastward and northward, we will find *these* limestones resting on the Dayton and Springfield groups. This limestone is near 2,000 feet higher up in the crust of the earth than the blue at Cincinnati (I do not mean on a surface bed) ; of course, it is correspondingly newer. It is newer than the grey limestone at Dayton. The blue at Cincinnati is the old Silurian of the books ; the grey, or cliff, as it is called in the early Ohio Reports, corresponds to the new Silurian. In a map of North America, by Sir Charles Lyell, *this* rock is put down as new Silurian, constituting part of the same system as the Dayton and Springfield quarries. In a map by Marcon, it is put down as Devonian, a system which lies immediately above the new Silurian and below the coal. I think neither of these men have been on the ground. It is a question of some interest to determine the exact place of these limestones. The problem will be solved, not by the character of the rock, but by the fossils which the rock contains. Most of the forms of life which sported in the old Silurian seas, had perished before the new Silurian fauna was created, and so, too, a great part of the new Silurian fauna had perished before the Devonian creations. I shall confine myself to a description of the most common fossils found here. You can find here the outlines of a very quaint fish. It must have died and sunk down, into its bed, when it was a soft, oozy, calcareous mud, at the lake bottom. It was incased in an armature of bony plates. The plates present numerous little warty

points ; they must have protected the fish much as the iron plates protect our Monitors. Perhaps the nearest living representative of this old fish is the *cepidasteus*, or Gar of the lake. It is a fish unknown in the living world. It is known to science as the *cocosteas* from the berry-like tubercles on the plate. Now this fish did not live when the new Silurian limes were formed. It is peculiar to the Devonian. It alone would be sufficient to determine the position of this rock. Sea shells are abundant ; I name one, the most common. A large globulus shell, with fine threads running from the beek to the margin—the *placenta placana*. A smaller shell, valves unequal ; a deep cut running down the larger (ventral) valve ; a fold on the smaller (dorsal) ; the cut and fold both smooth ; the rest of the shell ribbed, the hinge line prolonged and straight. the *spirifer mucronatus*, a Devonian shell. Corals are abundant. Indeed these limestones are almost entirely of organic origin. In the “*Testimony of the Rocks*” you will see a beautiful star shaped coral, figured as the Peugella. It is a Devonian coral, and very abundant. The polypes grew in columns, and left their skeletons to be polished as ornaments for our mantles and centre tables. The Favosites, the tubes small, compact ; platforms across them also abound. They are new Silurian and Devonian. The crinoide, most beautiful little lilly-like animals, so abundant in the earlier oceans, covered the lake bottom here with their jointed stems, and petal-like fingers. No locality in the west affords so fine a view of the prints left by the immense islands of ice, which floated southward over our continent, carrying boulders, and gravel, and clay, as Sandusky and the islands here, and a study of these grooves and the old lake ridges, may give us much light on the antiquity of the drift.

This paper has already transcended the limits I had assigned it and I close, hoping it may repay the time spent in its perusal.

I am, very respectfully,

your most obedient servant,

T. WOODBRIDGE.

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THE following order has just been sent out by the Surgeon-General. It is undoubtedly a wise one, so far as the regulating

the number of beds to be placed in any hospital when originally organized goes. The difficulty is to keep the number of patients down to the standard proposed. We were recently at Fortress Monroe when this order was received at one of the large hospitals of that station. Measured by its requirements it was already greatly overcrowded; and yet the Medical Director did not hesitate to send in great numbers of patients sick with typhoid fever and measles, from the ships of Gen. Banks's expedition lying in the Roads, who filled the buildings to excess. The ventilation was generally good, owing to the special care of the officers, although the air space was, in many instances, hundreds of feet per man less than the prescribed quantity. Necessity knows no law.—*Boston Med. & Surg. Journal.*

“ SURGEON-GENERAL’S OFFICE,

Washington, November 24, 1862.

“ The Surgeon-General directs that the minimum allowance of cubic feet of space for patients in tents and military hospitals shall be as follows :

“ 1st. In all rooms ventilated by windows at the end or one side only, 1200 cubic feet per man.

“ 2d. In all hospitals constructed after plans approved by the Surgeon-General (pavilions with ridge ventilation), 600 cubic feet per man.

“ 3d. In all other buildings occupied as general hospitals, 800 cubic feet per man.

“ The maximum number of patients allowed in a hospital tent shall be five in winter and eight in summer.

“ By order of the Surgeon-General,

JOSEPH R. SMITH, Surgeon U.S.A.”

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M. MAISONNEUVE informs the Academy of one of his cases operated on by the *diaclastic method*. A woman in the Hôtel Dieu had an ankylosis, resulting from fracture of the neck of the thigh and was thereby prevented from walking. The “hardi” surgeon broke the ankylosis, and cured the patient. The voluntary fracture made by his diaclastic apparatus was performed, we are told, without producing splinterings, or any injury to the soft parts.—*Brit. Jour.*

M. CHARCOT relates a case of exophthalmic goitre, in which all the symptoms were most favorably modified or arrested by the puerperal state. It appears that the same results have been observed in three cases recorded, in which the women became *enceinte* while suffering under this affection.—*Brit. Jour.*

M. CHASSAINAC has communicated to the Société de Chirurgie, a case of false aneurism of the femoral artery cured by digital compression in seven hours.—*Brit. Med. Jour.*

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*Spots on the Sun.*—There are now more spots on the sun than have been seen for many years; some of these are visible through a smoked glass to the naked eye. Several stars—some of them of great brilliancy, which, from their ascertained distance, must have been as large as our sun—have totally disappeared from the sky; and the question has been raised, among astronomers, whether the light and heat of the sun are fading away. As this would be accompanied by the destruction of all the plants and animals on the earth, it is rather an interesting question. The sun's light and heat are diminished by the dark spots, at the present time, about one per cent.—*Med. and Surg. Reporter.*—*Jour. of Meteria Med.*

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*Early Marriages.*—From the interesting figures which Mr. Hermann Merivale has collected concerning the population of France, we may draw some good illustrations of the importance of early marriages to the well-being of the individual and for the progressive strength of the nation. The rate of mortality in France has not increased since the beginning of this century; the number of marriages has not diminished, it has remained stationary. Nevertheless the population of France has remained stationary, while our own has enormously increased. The “prudential check” on births has operated through later marriages, owing to the want of outlet for population by emigration. The result of this tendency to late marriages in France is, that the average fecundity of such unions is far below that in this country, and is steadily but slowly diminishing. Here the annual rate of fertility may be represented by 4.5. In France it has been, in 1822–31, 3.64; 1832–41, 3.41; 1842–51, 3.19; in 1855 it had fallen to 2.96; in 1856 it rose to 3.11. Nothing can bring out more clearly the unnatural and deteriorating influence of late marriages. Every physiologist and

every physician knows that in proportion as advanced age operates to limit the number, so also does it affect the development and force of the children. The scanty offspring of late marriages will always, man for man, present a marked inferiority in physical qualities to the more numerous race springing from young and healthy parents. There are accessory conditions engendered by this state of society, this "prudential check" upon marriages, which increase the evil. The irregularities of unmarried youth too often taint the blood and sap the force of the procrastinating husband; the irregular unions which abound in France are as notoriously infertile as they are dangerous. In this country, modern habits of luxury threaten to have an operation only less dangerous because more limited than the "prudential check" arising in France from an absence of outlet by emigration. The figures which we quote afford striking illustrations of its dangers, and should give a fresh impulse to statesmen and moralists in combatting the tendency to late marriages.—*Lancet.*

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*An Enterolith Weighing Nineteen Ounces.*—We find, in the *Gazette Hebdomadaire*, an account of this case, given by Dr. de Tocat. The patient was a lady, aged 45, in whom a tumor appeared in the right hypogastric region, and attained, in the space of five years, the size of a full-grown foetus's head. When small it had fluctuated and yielded some pus on being incised. At last, when the tumor had reached the size just mentioned, and fistulous tracts had formed, it was thought advisable to remove the foreign body, which had long before been ascertained, by probing, to be of the petrous kind. The fistulous tracts were slit open, and after the mass, which was largely adherent, had been carefully detached from the viscera, it was removed, and found to weigh nineteen ounces. Its layers were concentric, and composed of phosphate and carbonate of lime, mixed with some fatty matter, the nucleus consisting of scybala. The patient died of peritonitis seven days after the operation, and no post-mortem examination was obtained.—*Lancet.*

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*Fattening Cattle on Cod-Liver Oil.*—A farmer of Haubourain, France, has just tried the experiment of fattening cattle by the use of cod-liver oil. The trial was first made upon two calves, eight

sheep and two pigs. The result surpassed all expectation. In ninety days they were all in prime condition, the flesh being perfectly white and of easy digestion. The quantity given was—to the pigs sixty-three grammes (two ounces) per day, to sheep thirty-one grammes, and to the calves fifty grammes. For the calves the oil was mixed with bran and chopped straw, for the sheep with bruised beans, and for the pigs with their regular food.—*Living Age.*

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*Inefficient Examination of Recruits.*—The following extract from a letter, purporting to be from a surgeon of one of the regiments which lately left this State, confirms the truth of the remarks which we have so often had occasion to repeat respecting the duties of examining surgeons:—

“Our greatest trouble is with men who should never have passed the examining surgeons of the towns, and if I had been able to inspect the regiment further, I would have thrown out twenty-five men. As it is I have made out some twenty certificates for disability. Among those passed were, one well known to have epileptic fits, five cases of hernia, three varicose legs, one chronic rheumatism, with knee joint spoiled, one deficient in intellect, one without a sound tooth, and one marked case of phthisis. I think the physicians who examined these men were more anxious to please their selectmen than to serve their country. The towns paid bounties to such specimens, and saved the obloquy (?) of a draft by sending such burdens into the field. It is amazing how many of our men were never stripped at the examination, which was very often by ‘word of mouth’ only.”

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*Tracheotomy Tube dropped into the Left Bronchus.*—At a recent meeting of the Medico-Chirurgical Society of Edinburgh, Mr. Spence mentioned the particulars of a rare accident which had come under his notice. A man had had tracheotomy performed several years ago by Mr. Edwards, and since worn a double tube. Yesterday, while riding on horseback, the rim of the tube, which had been gradually wearing, gave way, and it fell, as the man expressed it, “into his chest.” The man went at once to Mr. Edwards’s house but as that gentleman was from home, his assistant put in another

tube and sent him to the hospital, where he came under Mr. Spence's care. When Mr. Spence saw the patient he was breathing quite freely, and the sounds on auscultation were very much the same on the two sides of the chest. A probe was in the first instance passed down into the right bronchus (into which it was generally said that foreign bodies fell) but nothing was felt; it was then passed into the left bronchus, and the tube was at once felt. An attempt was then made to extract the tube without enlarging the wound, but was unsuccessful. Chloroform was then administered, the opening was enlarged by cutting through two or three of the rings of the trachea, a pair of bent forceps was introduced, the tube was seized, drawn to the opening, and then extracted. Mr. Spence observed that so far as he knew this was the only case of the kind, but it should teach cutlers to make their tubes in two lateral halves and then join them together; for when, as at present, the shield was fastened to the tube, the soldering must in course of time give way.—*Edinburgh Medical Journal.*

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*On two New Causes and a New Method of Treatment of Blepharoptosis.* By M. DE LUCA. (*Gazette Hebdomadaire*, May, 1862.)

The author claims to have found the cause of ptosis of the lids to consist often in granulations of the conjunctiva, or in the transformation of the conjunctival tissue in a fibrous or cartilage-like substance, preventing the lid from opening freely. This pathological condition is stated to be the consequence of repeated conjunctivitis, ulcerations of the conjunctiva, and the careless application of caustics. In both cases, the author has been successful in the treatment by scarifying the conjunctiva. This procedure caused in the first category of cases resorption of the granulations; in the second category, the scarifications produced, but only after frequent repetition, a rush of blood towards the hardened tissues; and afterwards this vascularization reproduced the normal histological elements of the conjunctiva, and gave back to the lid its former flexibility.

We do not believe that our knowledge of these conditions has been increased by the article under consideration. It is obvious that an accumulation of granulations, particularly in the fold be-

tween conjunctiva bulbi and palpebrarum, may form a mechanical impediment of the movement of the lids, and that it may become necessary to treat the primary cause: whether scarification would be the most proper mode of treatment in chronic cases, still admits of doubt; but in regard to the second series of cases, it seems improbable that by mere conjunctival inflammation the elastic tissues of the fold should ever adopt a cartilaginous or fibrous condition; that (the mal-treatment of granulations with caustics producing only, according to the general experience, a change in the condition of the tarsal cartilage and the conjunctiva covering it,) the motion of the lids should be lessened by changes in this part; and finally and mostly, that repeated scarifications should reproduce the normal structure of a membrane changed into a fibrous cicatrix by destruction and secondary contraction of the original tissues.

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*Neuralgia treated by Enormous Doses of Sulphate of Morphine.*  
By T. B. TOWNSEND, M.D., of New Haven, Conn.

In the month of August, 1861, a patient presented himself under the following circumstances:

The patient was 5 feet 10 inches in height, weighed 200 lbs., muscular system in a perfectly normal condition. Alimentary canal performing its functions naturally and regularly.

Notwithstanding this plethoric and robust condition of body, he suffered from an intense pain in the region of the left shoulder, extending down the arm, and dating back about four weeks to its commencement.

Since early childhood he has been in the enjoyment of perfect health, and even at the first visit, although I made a careful examination of his case "cap-à-pie," nothing of an abnormal nature could be detected, aside from a natural depression, resulting from the severe pain and disturbed rest. Neuralgia suggested itself, and a subsequent train of symptoms has without doubt substantiated the diagnosis.

The excessive and almost continued pain, with its natural interference with sleep, had for the four weeks previous to his visit, reduced his weight from 215 lbs. to 200 lbs. Having employed the sulphate of morphine in several cases of neuralgia hypodermic-

ally with complete success, I had no hesitation in administering it immediately.

The one-eighth of a grain thrown under the skin produced no perceptible effect; but when increased from one half to one grain the pain immediately subsided, and the arm, which was powerless before the introduction, was able to perform its proper functions wholly unimpaired, during a period of 24 hours.

Upon a recurrence of the pain a reintroduction was necessitated, followed by the entire disappearance of the neuralgia. The appetite, which was slightly impaired, returned, and the system generally recuperated, and thus the case continued for about four months, the injections not exceeding five grains of morphine in the twenty-four hours.

During this period of four months the sulphate of quinine in large doses, the salts of iron, arsenic, iodide, potass, strychnia, stramonium, cannabis indica, ammonia muriatis, etc. etc., were employed, but without any perceptible benefit. In fact, the treatment included illustrations from all the different classes of remedial agents found in the *Materia Medica*. Up to January, 1862, the neuralgia had been confined mostly to the left shoulder and arm, but at this time a marked change occurred. The pain became more excessive, and extended down the side to the lower extremities, across the abdomen and chest, affecting not only the muscles of the chest, but those of the bronchial tubes, producing strongly marked paroxysms of asthma.

On account of the locality of the disease and its exaggeration, it was necessary to increase the dose to six grains daily, and at last after three convulsions, which lasted about half an hour each, during which time the functions of the sensorium were greatly perverted, and almost entirely suspended, it was necessary to increase to eight grains in the twenty-four hours.

Previous [to January, 1862, he has not been confined to the house even for a day, but during the attack connected with the convulsions he was obliged to remain in bed for six weeks.

From the commencement of the disease and throughout its course, there has been no inflammatory action and no symptomatic fever.

In the neighborhood of March 1, 1862, the neuralgia left the limbs and located itself in the diaphragm and back, affecting the muscles of the bronchi but slightly. The contractions of the dia-

phragm were so violent as to cause the abdomen to assume the dimensions of a female at the sixth month, which subsided immediately after the injection of the morphine, leaving it soft, flat, and normal. The contractions have produced an umbilical hernia (although there was no predisposition), which has attained the size of a hen's egg. Up to the present, July, 1862, we find him in the following condition, viz., general health fair, weight 160 lbs., appetite good, pain comparatively slight, and when free from it, *seemingly nearly* as well as ever. The injections are continued once or twice daily, averaging ten grains in the twenty-four hours.

Near the middle of August, 1862, a permanent enlargement of the abdomen was noticed, which gradually increased until November, 1862, when, after failing with the diuretics, hydragogue cathartics, and other agents usually employed, I drew off sixteen quarts of serum of the usual characteristics found in ascites.

This occasioned great relief, and mitigated all the distressing symptoms to such an extent, that he was able to walk out with the aid of an assistant.

His condition Nov. 20, 1862, much emaciation, weight 140 lbs., return of ascites, occasioning pain from pressure. Appetite good, sleeps poorly, pulse weak, constipation, confined to bed, pain of neuralgia excessive, but suppressed by the morphine, of which he takes daily from twenty-five to thirty-five grains, seldom less.

December 2, 1862.—I re-performed the operation of paracentesis abdominis, and drew off about eighteen quarts of serum, of the ordinary character.

This I was prompted to do in order to palliate the extreme dyspnœa, although he was in a very depressed condition. The breathing was relieved, but the pain, which was located in the back, continued. He gradually sank, becoming comatose, and death terminated his horrible sufferings on the fourth instant.

The greatest amount of morphine given in the twenty-four hours, when the suffering was the most acute, was over fifty grains (the morphine being of the first quality). When any attempt (unknown to the patient) was made to reduce the dose, it failed to control the pain, and I have been obliged to gradually increase the strength until (as before stated) over fifty grains have been administered in the course of a day, and that without producing any marked symptoms of narcotism.

The amount of morphine taken during the treatment, extending

over sixteen months, is almost fabulous; five thousand grains would not exaggerate it. It never failed to relieve the pain and spasm of the muscles; the latter being often so severe of the recti-abdominalæ, as to assimilate the emprosthotomos of tetanus. The muscular fibres between the lineæ transversæ were so firmly contracted as to form distinct hard tumors the size of a hen's egg. No effect was noticed as attributable to the morphine, with the exception of the immediate and total subsidence of the neuralgia. He had never taken any of the salts of morphia, or preparations of opium, before he was attacked by this malady, and his system gave no evidence of an habitual use of alcoholic stimulants. The appetite continued good throughout the course of the disease, perhaps accountable to the fact that no morphine was taken into the stomach. This case furnishes many valuable points of interest.

1. It illustrates a most formidable and obstinate instance of the disease with which we are obliged to contend. 2. The great tolerance of the system to morphine, and the immense quantity which was given in so brief a time, without perceptibly producing other than a transient effect upon the physical economy. 3. The almost uniform effect of the morphine under all circumstances, and without regard to the parts selected for its administration (for it was injected into almost every region of the body), and the excessive tonic spasms of the diaphragm and recti muscles.—*American Med. Times.*

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*Iritis Gummosa*, by A. GRAEFE, M.D., and A. COLBERG, M.D.  
(*A. J. O.*, VIII, 1.)

An exsudation of the nodular form, characterizing syphilitic iritis, was extirpated by Dr. Graefe, as, in spite of anti-syphilitic treatment, it grew rapidly, and threatened to ruin the eye entirely. Mercurial frictions and calomel had been used and produced salivation, but showed not the slightest influence on the local affection, on account of which mercury had principally been so freely used. Atropine did not act on the pupil, which was closed by a pseudo-membrane: the iritis seemed about to take the suppurative character, and most dangerous seemed the rapid growing of the nodus, the vascularized surface of which seemed nearly to touch the cornea. Under these circumstances, Dr. G. resolved to try as the last expedient the extirpation of the growth. The operation

was a modified iridectomy. After the removal of the tumor, the inflammation subsided, and some time afterwards a central artificial pupil allowed the patient to read No. 3, (Jæger.)

A return took place soon after this good result had been attained, and made a second removal of new tumor necessary. Previous to this, an extensive obscurity of the cornea (sclerosis) had greatly reduced the sight of the patient, so that his hopes were based on a small piece of normal cornea, which might be eventually advantageously used for an iridectomy.

The tumor was examined by Dr. Colberg, and consisted mostly of small cells. Not all the cells had a nucleolus; several nuclei showed two nucleoli. These cells were all *coverless*, but there were spindle-shaped ones with a smooth *cell-membrane*.

Small pigmented bodies were to be found in all parts of the tumor, particularly near the base.

It presented throughout, from its surface to its base, the characteristic elements of recent proliferation of cellular tissue.

It resembled altogether the early stage of the "*gummi-growth*"—(VIRCHOW.)

The indication to remove acute iritic exsudations, and therefore the opportunity to examine them, are so very rare, that this case offers a double interest. The extirpation of the tumor is indicated in all similar cases, as the globe may be perforated, or purulent iritis set in, if another treatment is pursued. The mercurial treatment was perfectly valueless in this case. This will not shake the full conviction of a pro-mercurialist, which all those probably are, who have seen the superb effects of mercury in cases of iritis in general; and even those who, like the modern school of anti-mercurialists, declare that mercury only produces a latency of the syphilitic poison, admitting that it acts quicker on the syphilitic productions than any other remedy, must approve the administration of mercury in a case where so important an organ as the eye is in danger of being lost.

The resemblance of "*granulation-tissue*," of the tissue of lupus and sarcoma, and the iritic nodus, is clearly demonstrated by Dr. Colberg, who believes—and we with him—that the proof for the existence of "*gummous iritis*" in Virchow's sense is given by this case.

*Hypertrophy of the Lachrymal Gland—Ophthalmoptosis—Exstirpation of the Tumor—Cure with Conservation of Sight.*  
By Dr. WARLOMONT. (*Annales d' Oculistique*, July and August, 1862.)

The patient, a woman 67 years of age, had been hurt by the finger of a child near the external canthus; the pain soon subsided, and a few days afterwards there was not the slightest trace left. Soon after the region began to swell, but without causing pain or trouble. It lasted for some time, till the tumor began to compress the eye and to make it protrude from the orbit; and then only the patient came to ask the advice of the author.

He found the superior lid tumefied, brown, covered with varicose veins, enormously distended, and paralyzed in its movements. The eyeball was entirely out of the orbit, lying on the cheek, where it was held by the patient's hand; the position of the inferior lid was normal, and compressing the posterior part of the dislocated globe with its ciliary margin. When the eye was not kept in its place, it glided more and more forwards; the posterior part of the globe was caught between the margins of the lids, and the patient then felt the most violent pain. *The visual functions were preserved;* fingers were counted in spite of the obscurity of the cornea. The pupil was almost normally movable. The tumor causing these symptoms was hard, roundish, elastic and immovable, seemed to adhere to the bone, and occupied a place of more than three centimetres between the external canthus and the globe, which it pushed downwards and inwards; it was impossible to sever it from the arcus superciliaris, to which it seemed firmly united; on the other hand, it was evident that it adhered neither to the eyeball nor to the inferior bones of the orbit; the tumor was not, and had not been, painful; it could be touched without inconvenience to the patient when the eye was only kept in its place.

The patient was pale, thin, and her face expressing great anxiety: she asked to be relieved from her infirmity.

The author states that he and several of his friends could not determine a complete diagnosis. They did not consider the tumor of a malignant nature, and thought it to be fibrous, or fibroplastic. The rare occurrence of hypertrophy of the lachrymal gland, and the non-existence of palpable signs for its diagnosis, did not allow them to consider it as such.

The deep seat of the tumor in the orbit, where it was supposed

to have ramifications, and the paralysis of the elevator of the superior lid, induced the operator not to try to save the latter muscle. The tumor was therefore attacked from the conjunctival surface. The external commissure was prolonged (five centimetres), the superior lid everted, and then the tumor caught with a hook-ended forceps. It was so drawn outwards, and easily dissected. The globe remained intact.

A slight pressure did not reduce it, after that, into the orbit. The vessels of the orbit and the cutaneous incision continuing to bleed profusely, and the efforts to ligate or cauterize them having failed, the orbit was tamponed with lint, previously imbibed with a solution of perchloride of iron. After three days, the lint was expelled by the suppuration. The wound was dressed with common lint, and after three weeks the globe had resumed its normal position.

The tumor had the size of a thick nut, and was enveloped in a fibrocellulous tunic. It offered all the characteristics of the hypertrophy of the gland according to the description of Lebert.

The sight of the eye is preserved, the position normal, and only the ptosis of the superior lid is left.

The author regrets not to have tried to extract the tumor of a linear wound practiced above the m. levator palpebræ superioris according to the proposition of Mr. Halpin, as he would have done if the diagnosis had been more certain. He justly thinks that if this muscle had been saved, it would have probably resumed its functions after the cause of their destruction had been removed.

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OVARIOTOMY may be truly said to be the operation on the order of the day. Mr. S. Wells, on showing some ovarian tumors at the Pathological Society, remarked that "although last session he reported twelve cases with seven deaths, he could now say that, reckoning the above recent cases, the last nine were successful operations." On the 15th Oct., Mr. Bryant removed a large ovarian cyst from a woman in Guy's Hospital. The patient has, we understand, gone on well to a recovery, no bad symptom having appeared. Another operation of this nature has been performed at St. Bartholomew's, and one some few weeks ago at St. George's Hospital. In France, also, in all quarters, ovariotomists are springing up. Dr. Lee, in his forthcoming paper at the Medico-

Chirurgical Society, will, we doubt not, blow a counterblast to the proceeding; but one which, in the present mind of the profession, will be as unavailing as was the trumpet of King James against the smoking of tobacco.—*Brit. Med. Jour.*

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We are glad to learn from various sources, that at the recent battle of Fredericksburg, the ambulance and hospital arrangements of Dr. Letterman, Medical Director, were admirably carried out, and resulted in the prompt succor of the wounded. The system which he devised, and which we published recently, deserves the attention of the medical directors throughout the army.

The following is Senator Wilson's bill to facilitate the discharge of disabled soldiers from the army, and the inspection of convalescent camps and hospitals :

*"Be it enacted,* That there shall be added to the present Medical Corps of the army two Medical Inspector-Generals, and eight Medical Inspectors, who shall, immediately after the passage of this act, be appointed by the President, by and with the advice and consent of the Senate, by selection from the Medical Corps of the army, or from the surgeons in the volunteer service, without regard to their rank when so selected, but with sole regard to qualification, and who shall have the rank, pay, and emoluments now authorized by law to officers of those grades.

"SEC. 2. That the officers of the Medical Inspectors' Department shall be charged, in addition to the duties now assigned to them by existing laws, with the duty of making regular and frequent inspections of all military general hospitals and convalescent camps, and shall, upon each such inspection, designate to the Surgeon in charge of such hospitals or camps all soldiers who may be, in their opinion, fit subjects for discharge from the service, on surgeon's certificate of disability, or sufficiently recovered to be returned to their regiments for duty; and the medical inspecting officers are hereby empowered, under such regulation as may be hereafter established, to direct the return to duty or discharge from the service, as the case may be, of all soldiers designated by them."

The bill has been amended in the Senate so as not to limit the selection of medical inspectors to the army.—*American Medical Times.*

# O H I O

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### Original Communications.

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*Lectures on the Diagnosis and Treatment of the Principal forms of Paralysis of the Lower Extremities.* By E. BROWN SEQUARD, M.D., F.R.S., etc. Philadelphia: J. B. Lippencott & Co., 1861. pp. 118.

An increase in the number of the forms of disease, between which we are required to discriminate, is a necessary consequence of improvements in our means of distinguishing symptoms, and of advances in our knowledge of pathological processes. Dropsy is now but the name of a symptom, in the great majority of cases, and affections of the chest are far different in study and practice from what they were in the days of Cullen, when bronchitis and pneumonia, pleurisy and pericarditis were undistinguishable. The progress of our science forms groups of diseases from individuals, as nebulous spots are resolved into collections of stars by the telescope, and the change is not merely an improvement in theory, for direct and very great benefit results to suffering humanity, in the greater precision with which we can address our remedies to similar but different diseases, in more simple and direct treatment, and a consequent larger proportion of cures.

Paraplegia, the subject of the volume presented for consideration, is an instance of a disease undergoing the process of division,

into several according to the pathological cause giving rise to it. The author is one needing no introduction wherever science has her votaries; his name has long been connected with physiological literature, and especially with that confessedly most difficult part of it, the nervous system. It is not, perhaps, too much to say that the structure and functions of the spinal cord and brain of man furnish some of the most intricate problems which have ever been presented to the mind of man for solution. At these problems he has long been an enthusiastic and untiring worker; his labors have yielded rich fruits, gladly gathered by the practitioner, and it is well worth while to see what can be said upon so important a subject as paraplegia by one whose abilities are so great, whose opportunities have been so ample, and who has done so much to advance our knowledge in regard to this obscure branch of medicine.

If we consult the text-books upon practice in regard to diseases of the spinal cord we find them extremely unsatisfactory, except in regard to inflammatory affections; the symptoms of these are tolerably well presented, and prove reliable in proportion to the acuteness of the case; but when we look for guidance in regard to distinguishing the various chronic and organic affections of cord, non-inflammatory in nature, we find nothing precise, clear or satisfactory. Abundant reason for this is to be found in the obscurity which yet surrounds the physiology of this organ, and indeed of the whole nervous system—an obscurity which renders nervous diseases confessedly difficult of diagnosis, deceptive in their termination and difficult of treatment. But we are more concerned now with the fact itself than with explanations of its existence, and nothing will assist one so much in realizing it as a perusal of this little work.

Having a case of paraplegia under care the first question which presents itself is: What *may* be the pathological conditions giving rise to this paralysis? The causes of the disease and the relative frequency with which each occurred in one hundred and fifty cases are shown in the following table which best answers the ques-

tion, and which at the same time presents some interesting information as to its occurrence in the two sexes :

	Men.	Women.	Total.
Myelitis.....	35	9	44
Non-inflammatory softening .....	26	8	34
Reflex paraplegia .....	19	7	26
Congestion .....	8	5	13
Tumor or pressure on the cord.....	7	2	9
Spinal meningitis.....	6	1	7
Hæmorrhage.....	5	2	7
Hæmorrhage followed by myelitis.....	4	1	5
Hysterical paraplegia.....	—	5	5
	—	—	—
	110	40	150

"The most remarkable feature of this table is that paraplegia is much more frequent in men than in women. This conclusion is borne out also by the cases about which we have not come to any positive diagnosis ; out of 27 of such cases, 18 were men and 9 women ; so that, in all, the cases of paraplegia in which we have noted the sex, amount to 177, of which 128 were men, and only 49 were women."\*

In three cases of partial or complete paraplegia which have fallen under our care all were males.

We must take time here to consider the third class of the above table—reflex paraplegia—because it cannot yet be said to have been admitted to full fellowship with other forms of the disease ; it is not mentioned at least in our leading text-books, and its existence is yet by some denied. That denial we think cannot be maintained against the evidence presented by the author, and as the establishment of a new form of disease we deem an event of sufficient importance to justify a brief recapitulation of that evidence in order that each may have some ground for opinion and decision.

What is meant by "reflex paraplegia ?" A paralysis of the lower extremities arising from an irritation or excitation which is conveyed to the spinal cord by a centripetal nerve from some external or remote part of the system ; this "excitation, after having

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\* Pp. 99, 100.

reached the nervous centre, may be *reflected* on the blood-vessels of this very centre, or on those of the motor nerves or the muscles." We need not occupy time with a consideration of these different modes of producing the result, but rather with the question whether the result is produced or not. In the most excellent work of Graves upon Clinical Medicine, the existence of this form of paralysis is strenuously maintained, and several cases of it are reported; on the contrary in the last edition of Watson's Lectures that eminent authority feels bound to state that he thinks the existence of such a form of disease unproven; his own experience has furnished him with no facts which go to support it. In this discrepancy of authority it may be well to state briefly the points in favor of the existence of this form of disease, drawn from the work before us although not in the words of the author.

Many cases of well-marked paraplegia have existed when a post mortem examination failed to show the slightest departure from the normal structure of the cord. It cannot be objected to this that perhaps the observers were inexperienced or their examination incomplete; such cases have been most rigidly scrutinized by the best of pathologists, who brought the highest powers of the microscope to their aid, and who had the point at issue directly in view.

Cases have occurred exhibiting at once paraplegia and some local disease, as for instance, disease of the uterus or urinary organs, the most frequent causes of this form of paralysis; as the local disease has been cured by remedies addressed to it the paraplegia has yielded, and as the former suffered exacerbations the latter has returned. The case of paraplegia cured by the cure of a stricture, reported in Graves' Lectures is a striking instance of this.

Again, cases of paraplegia have proved incurable until remedies were addressed to some *ex centric* disease or irritation, and have then rapidly yielded.

In addition we may state that cases of reflex paraplegia have been reported by authorities the highest and most reliable in medical science; we have them by Graves, Stokes, Neligan, Stanley, Leroy d'Etoiles and Rayer, besides the author of this work; names

which are sufficient, we think, to show that there cannot be any mistake concerning the matter.

There is nothing which need cause us surprise, if we reflect for a moment, in the existence of such a form of paraplegia ; we have many analogous affections, and some which come before us almost daily. The motor nerves are implicated in the convulsions of children, and we constantly look first for some irritation external to the nervous centres before looking to them for the cause. In epilepsy we invariably examine every part of the system, every cavity, and every tract lined by mucous membrane, knowing that we frequently find some ex-centric and removable cause for the recurring convulsions, and thus escape the sad conclusion that they are centric in their origin. The influence exerted upon motor power, upon secretion and upon nutrition, by excitations or irritations conveyed from the surface or from some part of the interior of the body to the nervous centres and thence reflected upon blood-vessels, glands, muscles and nerves is only just beginning to be understood, and the modifications which increased knowledge upon this point will introduce into practice are scarcely appreciated, we believe, by any of us. The following experiment taken from the work (p. 171) is interesting in this connection :

"Suppose we have placed a tube in one of the ureters of a dog, so as to know what is the quantity of urine flowing out in a given time, after the dog has recovered from the shock of the operation. We then pinch the internal surface of the abdominal wall, in a part receiving its nerves from one of the first lumbar pairs, and, almost at once, we find that the secretion of urine is either stopped or very much diminished. It is not in consequence of a change in the circulation, due to the pain caused by the pinching, that the secretion is so much diminished, as we find the same thing taking place whether the spinal cord in the dorsal region has been divided transversely, or left in communication with the encephalon. And if the part of the cord which gives origin to the lumbar pairs of nerves has been destroyed—in which case the urinary secretion, after a short stoppage, becomes normal (as re-

gards its quantity at least), and is rather more than less abundant than before—we find that the irritation of the abdominal wall remains without effect upon the kidney. We must conclude, therefore, that when the spinal cord exists, the irritation passes through it, or, in other words, that the stoppage of the urinary secretion is due to a reflex action of the spinal cord."

This striking demonstration of a slight external irritation profoundly modifying the function of secretory glands, may indicate the manner in which reflex paraplegia is caused. To confine the application of this principle to paralysis alone would be to place a very narrow limit indeed to its extent; many forms of disease, the origin of which has been heretofore obscure, can be explained by reference to it; many others, which, like the one under consideration, may arise in this way, or from other causes, become amenable to treatment. In another work our author states that he can relate a very large number of facts "to prove that much more frequently than might be imagined, the various forms of insanity, of vertigo, of hallucinations, and of illusions, and also ecstasies, catalepsy, hysteria, chorea, hydrophobia, tetanus, local cramps, and even the general paralysis connected with insanity, may be due to irritations starting from a centripetal nerve, and frequently slightly felt, or even unfelt; and that the suppression of these irritations may permanently cure the patient, just as in cases of epilepsy."\*

Upon this most interesting portion of the subject we would fain go on did space permit. Showing the mode by which an external impression affects internal organs, how much light does it not throw upon the origin of many diseases, especially, for instance, inflammations of internal organs following the external impression of cold? Does it not account, too, for that mysterious connection between different organs known as "sympathy"—the existence of which has been by turns questioned, denied and affirmed, but which has never been banished from the domain of practice whatever may have been its reverses in theory? Does it not already

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\* Central Nervous System. Phila., 1860. p. 185.

assist us in seeing how remedies externally applied can affect internal organs? That cupping or leeching over an inflamed lung exerts a greater influence than the removal of the same amount of blood from some other part of the system is one of the best established facts of therapeutics; anatomy demonstrates meanwhile that the flow cannot be directly from branches supplying the diseased organ, and to reconcile and harmonize these two facts has been a puzzle heretofore unsolved. Can we not now read the riddle? and can we not, better than ever before, give "a reason for the faith that is within us" in regard to the efficacy of vesication, and of counter-irritation independent of discharge produced, in all cases of internal disease for which we apply it?

Can we distinguish between cases of paraplegia according to the pathological cause so as to make beneficial modifications in treatment? This is the second question, and an important one. We shall see more clearly how much is added to our knowledge in this work by first looking at previous authorities upon the subject. Brodie, whose lectures upon paralysis in his work on Clinical Surgery contain the best and most practical information with which we are acquainted, answers this question decidedly in the negative. After detailing a case, he goes on to enumerate the pathological conditions which may have occasioned the paralysis—such as softening, inflammation, tubercle, cancer, effusion of fluid and caries of the spine; and then gives cases in which the most marked symptoms existed during life, while a post mortem examination failed to exhibit any lesion of the cord whatever; (not surprising, with our present knowledge of the reflex variety). He then confesses that it is impossible to distinguish one of these forms from the other during the life of the patient. Acknowledging that the treatment should be varied according to the cause, he says: "We have not yet sufficiently advanced in our knowledge of this complaint to be able to state positively whether the disease be of one kind or another. If the disease be an inflammatory affection of the membranes, you may distinguish it tolerably well; but if it be of a chronic character,

it is difficult to discriminate. \* \* \* I really am not able to tell you how to distinguish one of these diseases from the other in the living person."\*

The facts presented by the author enable us now to answer this question very differently from the way Brodie did. Yet, in answering it affirmatively, if would not be safe to maintain that the diagnosis of every case is plain or even possible. The great majority of cases can be placed in the different groups without hesitation, while a few will remain distinguishable only after careful tentative treatment, or, perhaps, be incapable of classification.

The means by which we arrive at a differential diagnosis of the various forms of paraplegia, are, briefly, the presence or absence and the greater or lesser prominence of certain symptoms which have always heretofore indicated, as they now indicate, disease of the cord. Each pathological lesion, given in the table we have quoted, has a train of symptoms peculiar to itself, or shows a marked prominence of some symptoms, by attention to which its existence can be established, and the verification of this proposition will be at once seen, from our quotation from Brodie, to be a great practical advance.

The symptoms indicating disease of the cord are—

1. Various degrees and forms of paralysis of voluntary motion.
2. Diminution or loss of sensibility to contact, to temperature, to tickling, to pain, and of the *muscular sense*; each of which may exist independent of the others.
3. Involuntary movements, spastic, choreic, epileptiform.
4. Perversion of sensations.
5. Change in the temperature of the limbs paralyzed.
6. Change in nutrition of the same.
7. Absence, diminution, or increase of reflex actions. A remarkable example of increase of these actions is shown by the state of the cord after ingestion of strychnia. Bernard first showed that animals may take poisonous doses of this substance and have no convulsions, if care be taken to guard them from any

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\* Clinical Lectures on Surgery, p. 162.

external excitation. The moment, however, that impressions are made upon the surface, convulsions occur.\*

It is of course impossible for us to give in detail here the symptoms of each kind of paraplegia. We can only seek to give a general idea of the author's views. Thus, inflammatory affections of the cord, or of its membranes, are shown by the existence of spasms or cramps, of twitchings of the muscles, of pain, of a feeling of constriction around the abdomen, formication and prickling sensations, in addition to the paralysis; a reflex paraplegia is characterized by the absence of these symptoms and the presence of some disease of the urinary or genital organs, with the severity of which it increases or diminishes; paraplegia from softening of the cord, by its gradual progress, the age and constitution of the patient, the absence of the symptoms of inflammation; from haemorrhage, by the suddenness of its occurrence, pain, etc., etc.

As a specimen of the work, and because it gives succinctly the symptoms of reflex paraplegia arising from disease of the urinary organs, we subjoin the following contrast between "urinary paraplegia" and that arising from inflammation of the cord:

#### URINARY PARAPLEGIA.

1. Preceded by an affection of the bladder, the kidneys, or the prostate.
2. Usually lower limbs alone paralyzed.
3. No gradual extension of the paralysis upwards.
4. Usually paralysis incomplete.
5. Some muscles more paralyzed than others.
6. Reflex power neither much increased nor completely lost.
7. Bladder and rectum rarely paralyzed, or at least only slightly so.
8. Spasms in paralyzed muscles extremely rare.

#### PARAPLEGIA FROM MYELITIS.

1. Usually no disease of the urinary organs except as a *consequence of the paralysis*.
2. Usually other parts paralyzed besides lower limbs.
3. Most frequently a gradual extension of the paralysis upwards.
4. Very frequently paralysis complete.
5. The degree of the paralysis is the same in the various muscles of the lower limbs.
6. Reflex power often lost, or sometimes much increased.
7. Bladder and rectum usually paralyzed, completely or nearly so.
8. Always spasms, or at least twitchings.

\* Dalton's Physiology, 2d ed., p. 395.

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| 9. Very rarely pains in the spine, either spontaneously, or caused by pressure, percussion, warm water, ice, &c.<br>10. No feeling of pain or constriction around the abdomen or chest.<br>11. No formication, no prickling, no disagreeable sensation of cold or heat.<br>12. Anæsthesia rare.<br>13. Usually obstinate gastric derangement.<br>14. Great changes in the degree of paralysis, corresponding to changes in the disease of the urinary organs.<br>15. Cure frequently and rapidly obtained, or taking place spontaneously after a notable amelioration, or the cure of the urinary affection.*<br> | 9. Always some degree of pain existing spontaneously, or caused by external excitations.<br>10. Usually a feeling as if a cord were tied tightly around the body at the upper limit of the paralysis.<br>11. Always formications or prickling, or both, and very often, sensations of heat or cold.<br>12. Anæsthesia very frequent, and always at least numbness.<br>13. Gastric digestion good unless the myelitis has extended high up the cord.<br>14. Ameliorations very rare, and not following changes in the condition of the urinary organs.<br>15. Frequently a slow and gradual progress towards a fatal issue; very rarely a complete cure. |
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When the reflex paraplegia depends upon some other cause than disease of the urinary organs, considerable reliance can be placed upon the acidity of the urine in forming a diagnosis; in cases of myelitis, on the contrary, it is almost always alkaline.

"One of the most decisive symptoms of myelitis is the alkalinity of the urine. There is no patient attacked with myelitis in the dorsal region of the cord whose urine is not frequently alkaline. At times, especially after certain kinds of food, the urine is acid, but the alkalinity soon reappears."†

Upon this point Prof. W. A. Hammond, now Surgeon-General of the United States, in a clinical lecture published in June, 1861, says: "Alkalinity of the urine may, I think, be considered as almost pathognomonic of myelitis."

Also, in making a diagnosis, the relative frequency of recurrence of the different forms may be kept in mind; reflex paraplegia, inflammation of the cord and of its membranes, with the allied

\* Pages 33, 34.

† Page 65.

pathological condition of congestion, make up 83 of the 150 cases reported by the author, while 34 cases were from non-inflammatory softening, leaving only 33 cases to be distributed to five other forms, including the hysterical.

A brief general view of this subject of differential diagnosis may be given, by stating that the author gives as the result of anatomical research, of experiment on animals and of clinical research, two great classes of paraplegia, into one of which the great majority of cases will fall; the first of these is characterized by symptoms of irritation of the cord, as cramps, twitchings, formication, prickling, etc.; the second by absence of such symptoms. In the groups showing symptoms of irritation of the cord, an increased amount of blood in the organ is a constant condition; this needs no proof, since myelitis, meningitis, and congestion of the cord, fall into this division. In the other group there is an insufficiency of blood in the cord; the leading member of the group is non-inflammatory softening, a form of disease the pathological steps of which are well known, as it occurs in the brain. It may need some proof, however, to show the propriety of placing in this division the reflex form of paraplegia. To justify it we must of course show that this condition of the cord exists and causes the paralysis. Now experiment has shown, and the author of this work has been the chief experimenter, that blood-vessels stand in exactly the same relation to the nervous system as do the muscles of animal life—that they contract with energy and even persistently under the influence of their motor nerves, that influence being direct, i. e., originating in the centres, or indirect, i. e., *reflex*, arising from a peripheral excitation which has passed to the centres and thence been reflected upon the vessels. Now when such an excitation reaches the cord it may be reflected, according to the author, in three different directions, making three different modes, already alluded to, in which a remote excitation may cause paraplegia; it may be reflected upon the vessels of the muscles affected, upon those of the motor nerves of the affected part, or upon *the vessels of the cord itself*, and in each way cause paralysis. By this contrac-

tion of the vessels of the cord, the amount of blood passing through it is diminished, and its nutrition interfered with.

"A contraction of blood-vessels in the spinal cord *I have seen* (in the vessels of the pia mater) taking place under my eyes when a tightened ligature was applied on the hilus of the kidney, irritating the renal nerves, or when a similar operation was performed on the blood-vessels and nerves of the supra-renal capsules."\*

Bearing these two great classes of the disease in mind, we pass to the subject of treatment. We have to address to them two great classes of remedies, the one capable of increasing the amount of blood passing through the cord, of augmenting the rate of its nutrition; the other diminishing the circulation, and lowering the rate of nutrition; the former, of course, adapted to diseases in which the amount of blood in the cord is lessened, the latter to those in which it is increased. This is a point of the greatest practical importance, and one which justifies, as will at once be seen, all the stress which the authors lays upon it. It comes right home to the mind of the practising physician, for if these doctrines be true, it is not alone that he will fail to benefit his patient if he err as to the form of his disease, but he will add to his sufferings, increase his malady, and lessen his chances of recovery. The more potent the medicine the greater will be the mischief; great good will be accomplished or great injury inflicted, and thus it behooves every one to inform himself of views which come from so high authority and bear so directly upon the treatment of an important class of cases.

As with other parts of the subject we cannot go into details, but must refer our readers to the work itself; we can best, perhaps, give the author's views by passing briefly over the principal remedies used, showing how he applies them, and how this application differs from the usual mode.

STRYCHNIA is the only medicine we have capable of increasing the nutrition of the spinal cord. The general belief that this medicine acts on the spinal cord as an excitant, in the same way as

the application of galvanism, heat, etc., is stated to be an error. Numerous experiments are quoted to prove that it produces an augmentation of the vital properties of the cord; first, by increasing the circulation and thus influencing its nutrition, and secondly, by "acting in a direct and special manner on the tissue of the cord." Under its influence the reflex power of the organ is very much heightened, and, as already alluded to, to this source we must look for the convulsions which follow its use, they being entirely absent if care be taken to prevent all external irritation; they cannot therefore arise from the direct effect of the substance upon the cord.

"So long as the spinal cord does not receive some kind of excitation, however powerfully poisoned by strychnia it may be, there is no convulsion. I have seen frogs, deprived of respiratory and voluntary movements (after the extirpation of the brain and the medulla oblongata), remaining hours, days, and even a week, without the least convulsion so long as they were not troubled, although they were poisoned by a large dose of strychnia; but the least touch produced in them the most powerful tetanic spasms."\*

Now if this medicine really increases the nutrition of the cord, there can be no doubt as to which of the two great classes of paraplegias it is adapted; and there is none.

"1st. Strychnine ought to be employed in those cases of paraplegia in which there is no sign of irritation, or of increase of the vital properties of the spinal cord, such as the cases of reflex paraplegia and of white softening.

"2d. Strichnine ought to be avoided as a most dangerous poison in those cases of paraplegia in which there are signs of congestion or inflammation of the spinal cord or its meninges. For those cases the strychnine can only increase the cause of the paralysis."

Now we fear no discrimination of this kind is attempted in prescribing this remedy; judging from our own observation, no medicine is more generally administered for a disease, scarcely excepting quinia for ague, than strychnia for loss of muscular power.

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\* Page 51. See also Dalton's Physiology, 2d ed., pp. 394, 395.

The results must be disastrous if the views here presented be true, and they need only the support of clinical observation; this the author gives them by saying: "I know of a large number of patients whose paralysis has been increased by the influence of this medicine." It is interesting to observe, in connection with these doctrines upon the administration of strychnine for paralysis, how closely they accord with the conclusions of Fouquier, who, in 1811, first suggested it as a remedy for this disease; he found it injurious in many cases, and beneficial in those produced by such causes as venereal excesses, abuse of opium, intoxication, lead-poisoning, anger, fright, gout, rheumatism, concussion of the spinal cord, etc.

The author advises the use of smaller doses of this medicine than usually given—one-twentieth of a grain daily; if used in combination with opium, a still smaller quantity, as from one-fortieth to one-thirtieth of a grain daily.

BELLADONNA exerts an influence upon the cord directly opposite to that of strychnia; it diminishes the amount of blood in it, lowers its rate of nutrition, diminishes its reflex action. What is the proof?

"Not only *have I seen* the diminution in the caliber of blood-vessels of the pia mater of the spinal cord taking place in dogs after they had taken large doses of belladonna or ergot of rye, but I have also ascertained that the reflex power of the spinal cord (most likely as a consequence of the contraction of blood-vessels) becomes very much diminished under the influence of these two remedies, which in so doing act just in the opposite way to that of strychnine."

Then, of course, following the doctrines of the author, the class of cases in which it will do good is plain, as well as those in which it will do injury.

"1st. Belladonna is one of the most powerful and reliable remedies that we may employ in cases of paraplegia with symptoms of irritation of the motor, sensitive, and vaso-motor or nutritive

nerve-fibres of the spinal cord, or of the roots of its nerves; in other words, in cases of congestion, meningitis or myelitis.

"2d. Belladonna is a most dangerous agent, able only to increase the paralysis if employed in cases of paraplegia without symptoms of irritation, such as cases of white softening, or of reflex paraplegia."

Belladonna is not entirely a new remedy for paralysis; it has been long used by the French and Italian physicians in these cases, and cures have been reported by Bretonneau and by Troussseau among others. Until now, however, we have had no principles to guide us in its administration; it has been given quite blindly; and we even find in our text-books doctrines upon its effects *directly the reverse of correct!* We have seen that our author gives evidence as to its effects upon the cord which he *saw*, and which were to diminish the amount of blood in its vessels—certainly the reverse of a stimulating effect; yet we are constantly taught that belladonna is a *stimulant* to the nervous centres. The author calls attention to this serious error, and quotes from some "eminent" writers upon therapeutics, showing their teachings upon the subject. We will give the views of those generally in the hands of medical men in this country. Stillé does not mention it as a remedy for paralysis—he classes it with Narcotics—the action of which, he says, "is primarily stimulant in every case." Speaking of opium, he says, "it is decidedly less stimulant than belladonna." Headland, on the contrary, speaking of Deliriants (stramonium, hyoscyamus, and belladonna), says, "of all narcotics they approach nearest to sedatives." In Wood, again, we find the stimulating influence of belladonna particularly impressed, and the consequent deductions as to its administration strongly enforced. He says, "it powerfully stimulates the brain;" one of the indications for its use is stated to be "to stimulate the nervous centres," and it is said that "it has not been found applicable to cases in which the nervous centres were already in a state of active congestion or inflammation;" just the cases, it is plain, for which the author particularly recommends it. Speaking of its use in paraly-

sis, he says, "it is quite obvious that it should never be employed in cases dependent on congestion, inflammation, or organic lesion of the nervous centres, until this condition shall have ceased entirely, and nothing be left but mere inertness."

The wide difference between the teachings of the author and those of our standard authorities on therapeutics, can be seen at a glance. Following them, his experience has been a "success greater than he had dared to hope," and we can say that we have seen the most marked beneficial results follow the use of this remedy as he directs. If those doctrines shall be sustained, it not only enables us to apply this medicine with more precision, but greatly widens the range of cases in which we shall prescribe it, and it will take a far higher place in the list of *materia medica* than it has yet occupied. How will they influence, for instance, its administration as a remedy in convulsions, infantile and others? Already its use is being extended widely in these cases. Gonzalez Echeverria, late assistant physician to the London Hospital for Epileptics and Paralytics, in a course of lectures on Diseases of the Nervous System, published in the American Medical Times, says, "one of the surest remedies for infantile convulsions is belladonna." How do these doctrines bear upon the question as to whether belladonna is an antidote to the poisonous effects of opium? Many facts, leading to an affirmative view, have been published and are before the profession, while the doctrine is not yet received —indeed has not yet been established. These questions, foreign to our present subject, cannot be pursued here: they are, however, among the most interesting connected with the advance of therapeutics.

It is not necessary to say much of the use of ERGOT in paraplegia, since from the quotation already made, in which it is coupled with belladonna, and its effects upon the cord shown to be the same, the inference is plain that they are both adapted to the same class of cases. Lest, however, it may be thought that views of the action of medicines so different from those generally taught are held only by a single individual, we will present testimony upon this point

drawn from another source. Prof. W. A. Hammond says he has ascertained, by actual experiment, that ergot does cause a diminution of the capillary blood-vessels, and consequent deprivation of blood. "I prepared a weak aqueous infusion of this substance, and placed it on the web of a frog's foot, under the microscope. In a few moments contraction of the capillaries ensued, and they became so small as not to allow of the passage of the blood corpuscles. This experiment I have repeated several times, and am perfectly satisfied that the result was invariably as I have stated. More, I have frequently injected a small portion of the infusion into the stomach of frogs, and contraction of the capillaries of the web always followed."\*

This knowledge in regard to the action of ergot explains very clearly a result which has frequently been seen to follow the prolonged use of grain contaminated with it—dry gangrene of the extremities. By the constriction of the capillary blood-vessels, it as effectually deprives the limbs of nourishment as if a ligature had been placed around them.

The IODIDE OF POTASSIUM must be looked upon almost as a "new remedy," when considered in reference to the treatment of paralysis. Of our best known writers on *Materia Medica*, but one mentions it in this connection; Stillé merely alludes to it as having apparently cured some cases, and probably by causing the absorption of effused fluids. It is a medicine, however, to which our author accords a very high rank indeed in the treatment of paraplegia. "It is one of the most powerful agents of absorption of fluids effused in the crano-vertebral cavity, either out or in the substance of the nervous centres." The cases to which it is especially adapted are cases of white softening due to the fatty degeneration of the blood-vessels of the organ, and to cases having a syphilitic origin. Singularly enough, it is, too, "the only known remedy that may be employed without danger in the various forms of paraplegia;" hence it forms an exception to the rule established by the author, which is one of the most practical and important

\* Clinical Lecture on Chronic Myelitis. Am. Med. Times, June 15, 1861.

points of the work, that the injudicious administration of remedies is not only negatively injurious to the patient, but inflicts positive injury upon him.

Two or three important remedies yet remain which we cannot pass without mention, although it must be brief. To BLEEDING and CUPPING the author does not accord a very high rank; the former he has used but once; he is very partial to dry cupping over the spine in cases characterized by irritation of the organ. In such a case under our care (myelitis), the most prominent symptoms besides the paralysis being cramps of the lower extremities, wet cupping along the spinal column had the most marked and decided curative influence; improvement followed every application of the remedy.

MERCURY stands next to strychnia in the frequency with which it is administered for paralysis, and the blindness with which it is used. Infinite mischief, according to the author, has been done with this medicine. "It is only in cases with an increased amount of blood in the spinal cord or its meninges that mercury may be used with advantage. Its depressing influence, however, is such that I never employ it except in cases of syphilitic paraplegia. It is decidedly injurious in cases of white softening of the spinal cord, and also in cases of reflex paraplegia." As a remedy for promoting effusion, we have seen that iodide of potassium rivals if it does not surpass it, and we are therefore enabled, in most cases, to dispense with it.

GALVANISM and ELECTRICITY are very frequently used for paralysis, and surprise may be felt that they are omitted from our list. But the fact appears to be that it is impossible, or almost impossible, to pass a current of electricity through the spinal cord, unless it be one of so high a tension as to endanger the life of the patient; and even could we more easily succeed in doing so, there is not a particle of evidence that the impression made would promote a cure of any of the numerous morbid conditions of the cord. Experience, too, teaches that many forms of the disease are aggravated by this remedy, and the best writers upon it are of opinion that "palsies

depending upon a diseased condition of the spinal cord are scarcely ever amenable to electricity."\* It is as a means of maintaining the paralyzed muscles in a due state of nutrition, of preventing their atrophy from want of use, that galvanism is especially useful in cases of paralysis, and occasionally in bringing again into action the external organs after the lesion of nervous centre has healed.

We have thus touched upon the principal remedies used by the author, and those the most interesting from the novelty of their application, or the different rules laid down for their administration from those usually followed. By no means have we exhausted the work, either in regard to pathology, clinical experience and proof, or treatment. It is far from a ponderous volume, yet we venture to say that it contains more sound practical matter than many a more bulky companion on the shelves; that it will require more careful study to master its contents, and will yield more practical benefit to him who studies it carefully, although the cases of which it treats may not be numerous than many works far more pretentious, and which are heralded to the medical public with all the arts of the trade. We therefore heartily recommend it to those of our readers who wish to make themselves familiar with this most interesting subject, and we have sought to give such an idea of its contents that they be fully enabled to judge of the value and importance of the work.

J. C. R.

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\* Althaus' Medical Electricity, pp. 249—251.

## American and Foreign Intelligence.

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*Cases of Opium Poisoning treated by Belladonna, with Remarks.*  
By WILLIAM F. NORRIS, M.D., Resident Physician to the  
Pennsylvania Hospital.

CASE I. —, aet. 19, druggist, was admitted into the Pennsylvania Hospital Feb. 21st, 1862. On the morning of the 21st he came to the shop of his employer as usual, where he remained till after 10 o'clock, when he went to Rosengarten & Son's chemical works, and there purchased an ounce of the sulphate of morphia. He then walked into the outskirts of the city where he obtained some water, poured it into the bottle containing the morphia, and after having swallowed a large mouthful, recorked the bottle and put it into his pocket. This bottle was subsequently obtained by his employer, who carefully evaporated the contents to dryness, and found seventy-five grains missing from the ounce. The patient insisted that none of the contents of the bottle had been spilled. He afterwards wandered about the town for an hour and a half, when he began to feel tired and sleepy, and being near a friend's house, went in, stating that he had poisoned himself, and that he wished an interview with his sister before he died. He now appears to have become frightened at the step he had taken, and a few minutes after, although he was very sleepy, and his gait staggering; walked to a neighboring drug store, and obtained and swallowed two drachms of tannic acid, with a view of counteracting the effects of the morphia. His friends being much frightened, at once sent for his employer, who soon arrived and administered a quantity of sulphate of zinc. Dr. W. F. Atlee, a short time after, repeated the dose which then caused free emesis. He also gave a strong decoction of coffee with two grain doses of Squire's extract of belladonna, in solution, which were repeated at short intervals, until in about an hour he had taken twenty grains of the extract. When admitted into the hospital at 2.15 P. M. his pupils were contracted to a pin's point, his pulse 80 and soft, his gait staggering; slow of speech, although if sharply questioned, he would answer his name. He complained of thirst, and would sleep even when standing up if those supporting him did not keep him constantly in motion. He was at once sent into the garden, where two attendants kept him walking briskly. Ten grains of Herring's extract of belladonna in solution were then administered, and this was repeated in half an hour (3 o'clock). The pulse had now risen to 100, but the pupils were still excessively contracted, his intellect was, however, more active, and he now gave a tolerably clear account of himself, complaining of thirst. At 3.30 the pupils were beginning to dilate,

though he continued still very drowsy. At 3.45 his condition remaining unchanged, the pupils continuing about the same size, and no flush of the face being perceptible, ten grains more of the extract of belladonna in solution were given, making in all fifty grains, thirty of which were given after his entrance into the hospital. At 4.5 there was a marked change for the worse ; he could no longer support his own weight, and the attendants who had charge of him dragged him along ; his pulse was 120, and his pupils widely dilated. He was now carried up stairs, striped and put under a cold shower bath, which revived him so much that he struggled strongly to get away ; he was rubbed briskly with coarse towels till dry and the skin red. The good effects of the bath were but transient, for even before he was thoroughly dried, drowsiness again overtook him, and vigorous shakings with repeated attempts to make him walk entirely failed. He was therefore placed in bed. His respiration was labored and very slow. At this period Dr. F. G. Smith, the attending physician, saw him, and directed the application of the galvanic battery, one pole being placed over the cervical vertebræ, and the other over the diaphragm. It was then attempted to cause him to swallow some brandy with two grains of sulphate of quinia in solution, but this failed, a portion running into the larynx and exciting cough. Half an ounce of brandy was then given by injection, and at the same time mustard plasters were applied to the abdomen and inside of the thighs. Under the action of the battery the frequency of the respiration was much increased.

At 5.30 the pupils were fully dilated, respiration 11 per minute, pulse 112, capillary circulation more active, and a slight red flush of the face showed the full action of the belladonna. The injection of brandy was repeated at 6.30 and 7.30, but there was no material change in the symptoms. At 8.30 the pulse was found to be more feeble, the lips bluish, and respiration more laboured. The temperature of the surface was not much reduced. The galvanic battery was now reapplied, and under its influence the number of respirations rose to 13 per minute ; this was followed by an injection of brandy, and sulphate of quinia. At 9.45 the injection was repeated ; he then opened his eyes and looked around, but would not answer when spoken to, and soon relapsed into his comatose condition. His pupils continued dilated, and did not contract under the influence of light. Respirations were 12 to the minute and not quite so stertorous. Pulse 114 and stronger, the skin was warm and the flush had disappeared from the face. The mustard plasters having acted well had been transferred to the back and chest, where, having thoroughly reddened the skin, they were now removed. At 11.30 the skin was warm, lips red, pupils still dilated, and immovable, breathing stertorous, 10 per minute. The battery was again reapplied and the number of respirations increased to 12, pulse 108. He roused up and made some resistance during the application of the battery, mumbling, "What are you about?" but at once on cessation of the current dropped off into stertorous slum-

ber. At 1 o'clock A. M. he had so far recovered that the nurse was unable to give him his injection on account of his violent resistance; he refused to take anything unless he could see the Doctor's prescription for it. At 2 he was able to talk, and promised to swallow the medicine which was directed for him. The nurse reports his having vomited a dark-coloured liquid during the last hour, his pupils are still dilated and immovable, pulse 114, respiration 12 per minute. Half an ounce of brandy was now given him by the mouth, and a wine-glass of milk punch was ordered for him at 3 and 5. His respiration continued stertorous. At 8 o'clock he was awake and rational, his pupils somewhat dilated, pulse 114, full and strong respirations 16 to the minute, easy and natural. At 9.30 his condition was much the same, his bowels, however, had been moved, the evacuation being normal in character. He has also had much bilious vomiting, to relieve which, he took limewater and milk. At dinner time he took some beef essence, which he retained, and has had no vomiting since. His skin was still considerably reddened from the application of the mustard. From this period he continued steadily to improve, and on the next day had regained his usual health and appetite.

CASE II. J—K—, æt. 55, was admitted into the Pennsylvania Hospital on the 24th of March, 1862. He had two small superficial wounds in the neck, and a larger one at the bend of the left elbow, exposing, but not wounding, the median cephalic and basilic veins. He was brought into the house about 5 o'clock P. M., surly, and rather soporose, with a weak pulse. It was stated that his wounds were the result of an attempt at suicide at his place of business early in the morning, and that not succeeding in this he had at about 9 o'clock swallowed the contents of an ounce phial of laudanum. An emetic was at once administered to him, consisting of thirty grains of sulphate of zinc with an ounce of the wine of ipecacuanha, followed by a small quantity of warm water. In about three-quarters of an hour this produced slight vomiting. At 6 o'clock five grains of the extract of belladonna in solution were administered. This was repeated at 7 o'clock, at which period no change was remarked in his condition, except that he had become more sleepy, and could be kept awake only by having an attendant constantly to shake and talk to him. An hour later (8 o'clock) he had become still more sleepy, and the dose of ballodonna (five grains) was repeated, but it was with great difficulty that he could be made swallow it; he would put it to his lips, and before he had swallowed more than a few drops, would again fall asleep. At half past 8, his attendants were unable to keep him awake. At 9, his pulse was very feeble and rapid, his breathing stertorous, his pupils—as had been the case from the time of his admission—contracted, but not to a pin's point. Two grains and a half more of the extract of belladonna were now administered, large mustard plasters were applied to the front of the chest, and he was subjected to a strong current of electricity from an electro-magnetic battery, one pole being

placed over the diaphragm, the other on the cervical vertebrae. His pupils had now become dilated, showing the full action of the belladonna. Notwithstanding these remedies, his respiration grew slower; at 10, the pulse at the wrist could not be felt (auscultation over the heart, however, showed it to be 120). A little later, even under the stimulus of the battery, his respirations were only seven per minute. Artificial respiration was now employed, causing expiration by pressure on the anterior part of the thorax, and allowing inspiration to take place through the natural resiliency of the parts. Small doses of whisky, frequently repeated, were administered. It was with great difficulty, however, that he could be made to swallow it. Under this treatment he slowly improved; at 2 o'clock A. M. his pulse was 120, and could easily be felt at the wrist; respiration still stertorous, sixteen to the minute. At 4, 8, and 9 o'clock no change was noted, except that his pupils were less dilated than they had been the night before. At the latter hour, milk punch every half hour, with 20 min. spats. ammoniae aromat. was ordered. His condition remained much the same up to 12 o'clock, when he suddenly sank, and a few minutes after expired. No post-mortem examination could be obtained.\*

The first of the preceding cases presents several points of interest. 1st. The length of time which intervened between the taking of so large a quantity of morphia, and the appearance of the symptoms, which mark the second or soporose stage of the action of that drug. 2d. The recovery of the patient after taking so large a quantity of the poison. 3d. The action of the belladonna.

I. *The length of the time which intervened between the taking of the large dose, and the appearance of the symptoms.*—In regard to the first point, Mr. Taylor, in his work on *Poisons*, remarks: "When any one of the salts of morphia is taken at once in an overdose, the symptoms are strongly marked, and they follow each other more speedily. They generally commence in from five to twenty minutes after the poison has been swallowed."† Although this be the rule, yet the volume of the same author furnishes a remarkable exception to it, for at page 547, he relates the case of M. Bonjean, who swallowed fifty-five grains of the acetate of morphia, dissolved in an ounce of water, in whom "no symptoms of any importance manifested themselves until an hour after the poison was taken, and then there was simply giddiness, with a tendency to sleep. Two hours after the occurrence, he had still the power to answer questions! In four hours, deep coma supervened."

Christison quotes a case from Orfila where twenty-two grains of the muriate of morphia were taken, in which four hours elapsed before the patient first felt approaching stupor.‡ Half an hour later he could still answer questions, although he could not see the inter-

\* I am indebted to my colleague, Dr. John Ashurst, for the notes of this case.

† Taylor on Poisons, Philadelphia, 1859, p. 544.

‡ Christison on Poisons, Philadelphia, 1845, p. 558.

rogator. This delayed action is seen in other preparations of opium, and the same author relates the case of an habitual drunkard, who swallowed two fluidounces of laudanum, "while intoxicated to excitement from beer and spirits," where no material stupor appeared for five hours. He also adduces a case taken from Corvisart's Journal, where two and a half fluidounces of laudanum, with one drachm of extract of opium (*i. e.*, 213½ grs. of opium) were taken, without producing well-marked stupor till after the lapse of more than an hour.

II. *The recovery of the patient after so large a dose.*—The largest recorded dose of any of the salts of morphia from which any patient has recovered, that I have been able to find, is the case of M. Bonjean (above quoted) who took fifty-five grains of the acetate of morphia in solution. Taylor also gives a case where fifty grains of the same salt were taken on an empty stomach, and another where twenty grains were swallowed, both of which recovered. *Christison* (pp. 558–559) mentions an example of recovery from twenty-two grains of the same alkaloid.

III. *The action of the belladonna.*—Belladonna, under the different names of *struknos manikos*, *solanum furiosum* and *belladonna*, has been described by both ancient, mediæval, and modern writers. As it is an ornamental plant, growing in temperate climates, and having berries which possess a sweetish taste, there have been many cases of poisoning by it reported, principally from the accidental eating of the berries; and the symptoms of poisoning from its use seem to have been almost as familiar to the old authors as to us of the present day. A knowledge of antagonistic powers of opium and belladonna seems also to be of early date.—Pena and De Lobel, in their work entitled *Stirpium Adversaria Nova*,\* so early as 1570, give an account of Italian peddlers who excited the wonder of the common people by giving, to alleviate thirst, portions of the root of the belladonna, the evil effects of which were averted either by vinegar, wine, or theriaca.† In 1661, Horstius, in his *Opera Medica*,‡ relates a case of a man who swallowed a spoonful (*cochleare plenum*) of the inspissated juice of the belladonna, by mistake for rhob. sambuci. This was followed by dimness of vision, dryness of the throat, delirium, and tremors, from which he is stated to have recovered, after taking theriaca, with the juice of rue. In the work of Faber on *Strychnomania*,|| pub-

\* *Stirpium Adversaria Nova*, authoribus Petro Pena, et Mathia De Lobel, Medicis. Londini, 1570, p. 103.

† Theriaca was frequently administered by the old authors as a specific, in all cases of poisoning; thus Prosper Alpinus remarks: "Omnes affirmant theriacam illam (*viz.*, *Egyptiorum*), vim efficacissimam habere adversus omn'a venena."—Prosper Alpinus, *De Medicina Egyptiorum*, lib. iv p. 308. Lugdini, Batavorum, 1718. Giacomini also quotes him as stating that opium, combined with belladonna, weakens the action of the latter.

‡ *Opera Medica*, tom. ii., lib. 10, p. 515. Gouda, 1661.

|| *Strychnomania explicans strychni manici antiquorum vel solani furiosi recentiorum historiæ monumentum, indiis documentum, antidoti documentum, etc.*, by Johannes Matth. Faber, August. M. D. Augustæ Vindelicorum, 1677.

lished in 1677, thirteen cases in which belladonna berries were swallowed, are recorded ; of these, two escaped without any unpleasant symptoms but the remaining eleven were affected with delirium, dimness of vision, difficulty of swallowing, and a number with redness of the skin. Out of this number, there were two deaths ; in both the delirium passed away, and coma preceded death. The treatment in ten of these cases consisted chiefly of theriaca, with adjutants, which varied more or less in each case.\* He also quotes a case from Brothdequius, a contemporary, of a similar kind, in which recovery took place after the exhibition of opium.† In 1766, M. Boucher, of Lille,‡ published five cases of poisoning by belladonna berries ; his treatment consisted chiefly in the administration of emetics, purgatives, enemata, and vinegar ; the latter he looked upon as an antidote to belladonna. In two cases, however, one of which was in a state of coma, and the other delirious, preparations of opium were administered. I have not been able to find any further reference to the subject until 1810, when Joseph Lipp published an inaugural dissertation, entitled "*De beneficio baccis belladonnae producto atque opii in eo usu.*" This paper I have been unable to consult, but Giacomini,|| in his *Traite de Matiere Medicale et de Therapeutique*, states that in it are recorded several cures by means of Sydenham's laudanum. The latter author, in his article on opium remarks that it has constantly been found useful in the treatment of poisoning by hyoscyamus, stramonium, and belladonna, and asserts "*Les Italiens ont donne dans ces cas l' opium a haute dose et ils ont vu la stupeur, le delire et les convulsions disparaître.*"§ In a paper read before the Physiological Society of Edinburgh, by Dr. Thomas Anderson, in 1854, he remarks that, following out the suggestion of Dr. Graves, that an agent which would dilate the pupils might be administered with advantage in cases of coma with contracted pupils, in low fevers, it occurred to him to use belladonna in opium poisoning, and he there details two cases successfully treated by it.

From this period up to the present time, there have been numerous cases reported in the journals, both of opium poisoning, treated by belladonna, and belladonna poisoning, treated by opium. Of such of these as I have been able to collect details, I subjoin the following tabular list:

\* *Ibid.*, pp. 4—18.

† *Ibid.* 25 and 26.

‡ *Journal de Medecine, Chirurgie et Pharmacie.* etc., tom. xxiv. Janvier, 1776, pp. 310—332.

|| Giacomini, *Traite de Matiere Medicale et de Therapeutique*, Paris, 1839, p. 537, published in the *Encyclopedie des Sciences Medicales*.

‡ *Ibid.*, p. 70.

## Cases of Opium Poisoning treated by Belladonna.

Amount of opium.	State of patient.	Age.	Amount of belladonna administered.	Result.	Authority.
Sol. morph. muriatis 2 fluidounces (Ed.) (about 9 grs.) in 36 hours.	The patient, previously laboring under delirium tremens, now fell into profound coma, breathing 4-5 per minute, stertorous; pupils contracted to mere points; the pulse excessively weak and slow.	Not g'n.	Tinct. belladonnae 6 fluidr.; a dose of a fluidrachm, repeated every half hour.	Recovered from the effects of opium, but died three days afterwards from exhaustion on sudden rising. Coma had disappeared in 4½ hours after the first dose of belladonna.	Anderson, Edin. Journ. Med. Sci., 1854, p. 877-38.
Tinct. opii 5 fluidrachms (Ed.) (about 23 4-10 grs. of opium) in an hour and a half.	Entirely comatose; pupils contracted to mere points; respiration stertorous, 10 per minute; the pulse feeble, and extremities rather cold.	50	Tinct. belladonnae 1—2 fluidounces; in the course of an hour.	In 5 hours "all indications of opium poisoning had disappeared."	Loc. cit.
Tinct. opii 1 fluidounce, i. e. 37½ grs. of opium.	Comatose; respiration stertorous; pulse feeble, and 50 per minute; surface cold, and pupils contracted to a mere speck.	24	Extr. belladonnae 7 grains. Tr. do. 1 fluidounce.	Complete recovery.	Mussey, Bost. Med. & Surg. Journ., vol. liv., 1856, p. 56, from Cin. Med. Ob.
Tinct. opii 2 fluidounces, i. e. 75 grs. of opium.	..	..	Tinct. belladonnae ½ fluid oz., as injection p. rectum.	Cured.	Comegys, Ranking's Abstract, vol. xxxiii., p. 280, from Cin. Lancet.
Unknown.	Profound coma; skin pale, cold, clammy; pulse feeble, 40 per minute; respiration slow and "laborious; pupils excessively contracted."	2	Tinct. belladonnae 60 minimis; in dose of 15 min. repeated every 20 minutes.	Perfect recovery in 2 hours.	Lee, Amer. Journ. Med. Sci., Jan., 1862, p. 57-58.
Tinct. opii 1½ fluidounce, ab't 56½ grs. of opium.	Deeply comatose; pupils contracted "to a pin's g'n. head size."	Not g'n.	Tinct. belladonnae 11½ fluidr.; in less than 3 hours.	Rapid and perfect recovery.	Motherwell, Med. Times & Gaz., Jan. 4, 1862, from Australian Med. Journ., Oct., 1861.
Sydenham's laudanum (quantity unknown).	Somnolence, followed by vomiting, which was very distressing.	40	Hydro-alcohol. extract of belladonna 2 centigrammes (about 3-10ths of a grain).	The vomiting was promptly checked, and all traces of poisoning disappeared.	Behier, Ann. de Therapeutique, 1860, p. 18-19, par A. Bouchardat.
Decoction containing two poppy heads.	Constant somnolence; malaise; nausea; vomiting; face pale; pulse small; skin cool; pupils contracted.	54	One centigramme of the hydro - alcoholic extract of belladonna (ab't 16-100th gr.).	Cure.	Behier, loc. cit., p. 19-21.
Tinct. opii 2 fluidounces, i. e. 75 grs. of opium.	An hour and a half after taking the opium she had a flushed face; pulse 70; contracted pupils; stertorous breathing; could be roused with great difficulty; was given an emetic, which brought up a dark liquid smelling of laudanum; 5 hours after taking laudanum, was insensible to external impressions; pupils excessively contracted; surface cold and clammy; unable to swallow; countenance pale; pulse thready and feeble, almost imperceptible.	38	Tinct. belladonnae 1 fluid oz., by the mouth; Ext. belladonnae 20 grains, in solution, by rectum, within 17½ hours.	In 27½ hours after taking the laudanum she had entirely recovered.	Duncan, Am. Journ. Med. Sci., July, 1862, p. 277-8.

*Cases of Opium Poisoning treated by Belladonna—Continued.*

Amount of opium.	State of patient.	Age.	Amount of belladonna administered.	Result.	Authority.
Tinct. opii 1 fluidrachm, <i>i. e.</i> 4½ grs. of opium.	Incapable of being roused ; breathing heavily ; pupils contracted to a point ; skin warm ; pulse 100. small ; incapable of swal- lowing. (The child was convalescing from an at- tack of pneumonia follow- ing measles.)	4	18 drops of Thayer's fluid extract of bel- ladonna, in dose of 2 to 3 drops, by the rectum.	Died in about 13 hrs. after taking the lau- danum ; asphyxiated from the collection of mucus in the bron- chial tubes. The child had exhibited marked improve- ment after each dose of belladonna, and shortly before death all symptoms of opi- um poisoning " were entirely relieved."	Blake, Am. Journ. Med. Sci., July, 1862, p. 280- 281, from Pacific Med. and Surg. Journ., Apr., 1862.

*Cases of Belladonna Poisoning treated by Opium.*

Amount of belladonna.	State of patient.	Age.	Interval since taking belladonna.	Emesis.	Amount of opium taken.	Result.	Author- ity.
10 berries.	Dryness of throat and dimness of sight, followed by delirium.	23	7 hours to the first dose of opium.	3 hours after taking berries.	Tinct. opii 35 minims, dose 5 minims at first every 4, then every 2 hours ( <i>i. e.</i> nearly 3 grains of opium).	Cured.	Seaton, Medical Times and Gaz. vol. xix. p. 551-2. Loc. cit.
8 berries.	Dryness of throat and tongue, followed by delirium.	25	22 hours to first dose of opium.	4 hours after.	Tinct. opii 30 minims (nearly 2½ grains), in dose of 10 minims.	Cured.	Loc. cit.
6 berries.	Dryness of throat, etc.; intensely delirious.	7	10½ h'rs to first dose of opium.	6½ h'rs after.	Tinct. opii 144 minims, in dose at first of 8 minims, every hour; afterwards the dose was doubled as morphia. Whole quantity taken in 15½ hours, a little more than 9 minims per hour.	Cured.	Loc. cit.
2 berries.	Delirious, with the other symptoms of poisoning.	14	11 h'rs.	..	Tinct. opii 144 minims (about 11 grains of opium) in 12 h'rs.	Cured.	Loc. cit.
12 Berries.	Symptoms commenced in an hour ; became delirious in 3½ hours.	46	..	From a dose of castor oil.	Tinct. opii 8 minims, and afterwards 16 minims, every hour, till sleep was obtained.	Cured.	Loc. cit.
5 berries.	Delirium, etc.	8	12 h'rs.	..	Tinct. opii 148 minims (about 13 grains of opium), in 17 hrs.	Cured.	Loc. cit.
2 berries.	Delirium, etc.	12	10 h'rs.	None.	Tinct. opii and morphia, the equivalent of 24 grs. of opium, in 28 hours.	Cured.	Loc. cit.
Number of berries unknown.	Delirium, etc.	14	12 h'rs.	8 hours after taking berries.	Tinct. opii 76 minims (6 grains of opium), in 9 hours ; dose 8 minims at first, increased to 12 minims.	Died 29 hrs. after tak- ing berries ; comatose, and the pupils widely dilated; in all cases which recovered the pupils contracted before sleep.	Loc. cit.

## Cases of Belladonna Poisoning treated by Opium—Continued.

Amount of belladonna.	State of patient.	Age.	Interval since taking belladonna.	Emesis.	Amount of opium taken.	Result.	Authority.
4 berries.	Pupils dilated ; thirsty; skin hot; pulse 110 ; these symptoms, which appeared in $2\frac{1}{2}$ hours, followed by violent delirium.	9	5 hours till delirium set in; 15 hours to first dose of morphia.	..	10 minimis solution of muriate of morphia (L.) (with 1 fluidr. of brandy) 15 hours after eating berries, then fell asleep; during sleep a scarlet rash appeared; woke the next morning delirious, and was given the $\frac{1}{2}$ of a grain of morphia, in divided doses, but did not sleep till evening; woke well.	Cured.	J. Todd, British Medical Journal, Sept. 21, 1861, p. 305.
Succus belladonna 1 fluidrachm.	Pupils dilated ; tongue dry ; pulse slow and bounding ; purple flush of the face ; almost comatose.	6	..	None.	Tinct. opii gtt. 120.	Cured.	Lee, Am. Journal Med. Sci., Jan., '62, p. 57.
A cup of the infusion of the leaves of belladonna.	symptoms analogous to those of delirium tremens.	..	..	..	Three centigrammes (nearly half a grain) of the gummy extract of opium from hour to hour.	Cured.	Cazin, Traite prat. des Plantes Medicin. Paris, 1858, p. 125.
Belladonna plaster on the knee ; the cuticle having been previously removed by a blister.	In less than an hour bright erythema of the face, breast, and thighs, with intolerable itching, giddiness, nausea, dilation of the pupils, constriction of the fauces and thirst.	Ad't	Less than an hour.	..	Tinct. opii 1 fluid dr., aq. cinnamoni 1 fluidounce ; afterwards tr. opii 15 minimis "The first dose antagonized the belladonna in less than 30 minutes after it was taken."	Cured.	Lopez, N. Am. Medico-Chir. Review, March, 1860, p. 285.
Belladonna plaster four by two on the epigastrium.	Headache ; giddiness ; nausea, without vomiting ; dryness of throat ; delirium.	..	28 hours to the first dose of opium.	..	Laudan. Liq. Syd. gtt. 15, with ext'r. opii $\frac{1}{4}$ gr. in solution every five minutes ; after the first four doses the delirium began to yield ; dose repeated now every half hour only. "On the following morning the patient was in a perfectly satisfactory state, and despite the rather large quantity of opium taken, no sign whatever of narcotism was observable, an unanswerable proof of the antagonism of these two medicines."	Cured.	Perroud, Ranking's Abstract, vol. 33, 1861, p. 280.

## Cases of Belladonna Poisoning treated by Opium—Continued.

Amount of belladonna.	State of patient.	Age.	Interval since taking belladonna.	Amount of opium taken.	Emesis.	Result.	Authority.
Suppository containing 1 grammie ( <i>i.e.</i> 15.43 grs.) of assafetida, extr. belladonna 1 centigramme ( <i>i.e.</i> 0.15 gr.), one had been administered every day for 6 days, when symptoms of poisoning appeared.	Dryness of the tongue; the face flushed; eyes injected; pupils dilated; mind a little excited.	..	..	15 grammes of "sirop diacode!" caused subsidence of all the symptoms in 25 minutes; the same quantity was given in the evening with 2 cups of coffee.	..	Cured.	Behier, Ann. de Therapeutique, p. 22-24, 1860, par A. Boucharlat.

## Cases of Poisoning by Atropia treated by Opium.

Amount of atropia injected.	State of patient.	Age.	Amount of opium or its preparations administered.	Result.	Authority.
Sulphate of atropia gr. $\frac{1}{4}$ , injected over sciatic nerve.	Face flushed; breathing hurried; pulse rapid and small; skin hot and perspiring; restless; hands moving as if engaged in his ordinary work; inability to speak, from dryness of the mouth; itching of the skin; both cornea were disorganized (previously), and therefore pupils not visible.	..	Morphia muriatis solut. 25 minims (double or ordinary strength of the Edinburgh Pharmacopœia), <i>i.e.</i> about $\frac{1}{2}$ gr. of the muriate of morphia, were injected into the gluteal region of the opposite limb.	Almost immediately became calmer; slept in an hour; next day was quite well.	B. Bell, Edin. Med. Journ., vol. iv., July, 1858, p. 5-6.
Sulphate of atropia gr. 1-12th.	Dryness of throat; pulse rapid and rather small; slight delirium; subsultus; and jerking of the hands.	..	Morphia muriatis solut. 15 min. (same strength as above), <i>i.e.</i> about $\frac{1}{2}$ of a grain.	Relief immediate.	Ib., p. 6-7.
Sulphate of atropia gr. 1-30th.	Face intensely red; eyes brilliant; irides dilated; mouth and throat dry; difficulty of swallowing; nausea.	..	" $\frac{1}{2}$ gr. doses of morphia were given in quick succession, and in another hour the man was out of bed and well, except the mydriasis, which remained until the following day."	Cured.	Lee
Sulphate of atropia gr. 1-30th.	Toxic effects in half an hour; face and eyes injected; pupils dilated; giddiness and staggering gait; gastric pains, but no vomiting.	..	$\frac{1}{2}$ grain doses of morphia "promptly allayed the symptoms."	Cured.	Lee.*

\* I am indebted to my colleague, Dr. C. C. Lee, for the details of these cases. He refers to them in his paper on Opium and the Mydriatics, *Am. Journ. Med. Sci.*, Jan. 1862, p. 56.

In addition to the cases detailed in the foregoing table I have met with several others which, however, have not been reported with sufficient accuracy to admit of being tabulated. Thus, Mr. Behier gives seven cases of poisoning resulting from subcutaneous injections of the sulphate of atropia; he records one of these at some length, and sums up his remarks as regards treatment thus ; "In him, as in six other cases, opium in form either of extract or syrup arrested all the toxic phenomena." (*Ann. de Therapeutique*, 1860, p. 38.)

M. Courty, also, treating of the use of the same alkaloid in hypodermic injections, remarks : " Nevertheless, in the small number of cases where the atropic intoxication has given origin to cerebral symptoms which have appeared to require treatment, opium in doses of 25 milligrammes (*i. e.* 0. 28 grain) every half hour hastened the return of the functions to their normal state, by neutralizing in a manner the effects of belladonna upon the brain. One to two pills has ordinarily sufficed for a cure." (*Ann. de Therapeutique*. par A. Bouchardat, 1860, p. 40.)

In addition to the cases referred to in the foregoing table, where opium and belladonna have been given with a belief in their antidotal powers, several interesting observations are recorded where these agents in large quantity have been administered simultaneously through accident. Christison relates the case of a lady poisoned by three successive injections into the vagina, each containing "the active matter of a scruple of opium and half an ounce of belladonna leaves." Three hours afterwards she was insensible and motionless, the face pale, pupils dilated, pulse frequent and small and the breathing hurried. He remarks : "Here the opium seems to have prevented the delirium usually induced by belladonna in the early stage, while on the other hand the belladonna prevented the usual effect of opium upon the pupils, and actually produced the opposite action."\* The patient entirely recovered. Cazin gives an instance where six grammes of Sydenham's laudanum with two grammes of tinct. belladonnæ (equivalent to vini opii fʒj. m. xlv; tr. belladonnæ fʒj, U. S. P.) with forty grammes of the oil of sweet almonds intended as a liniment, were by mistake swallowed. This large dose caused only somnolence, injection of the face and conjunctiva, and dilatation of the pupils.† Dr. Coale reports a case where a child aged nine years swallowad two suppositories containing four grains of extract of belladonna and four grains of opium with very slight effect. The reporter, however, "supposes it possible" in this case that as dinner had been eaten a short time before, this may have retarded absorption.‡ Newman records a case where minute portions of a belladonna plaster accidentally swallowed immediately dispelled the soporific effects of a previous dose of morphia and caused some of the symptoms of belladonna poisoning.||

\* Christison on Poisons. Philada., 1845, p. 742.

† Cazin, Plantes Medicinales Indigenes. Paris, 1858, p. 149.

‡ Coale, Amer. Journ. Med. Sci., vol. xxvi. 1853, p. 69.

|| British Med. Journ., July 13, 1861, p. 30.

The foregoing cases seem conclusively to show that in opium poisoning belladonna in doses which in a state of health would certainly poison, may be administered with impunity and be followed by a rapid subsidence of the symptoms produced by the exhibition of the former drug, and *vice versa* that opium rapidly and safely counteracts the poisonous influence of belladonna. The treatment above indicated has, indeed, in some cases failed, and this may prove that they are not mutually specifics; but even in these fatal cases (which are few) we may sometimes see a partial amelioration of the symptoms, and it is well worthy of inquiry how much in these instances the relative quantities of the two drugs administered, the stage of poisoning in which the patient was first seen, the age and constitution may have contributed to the result.

Finally, how do they counteract each other? The mode of action of these drugs on the nervous system is not at present well understood, although several able essays have been written upon it. To those interested in the toxicology of these prominent narcotics I would especially refer as well worthy of perusal the papers of Mr. Hughes *On the Significance of the Contraction and Dilatation of the pupil produced by Opium and Belladonna respectively*;\* Mr. Harley *On the Physiological action of Atropine in Dilating the Pupil*;† of Fuller *On the Administration of Belladonna, and on certain Causes which modify its action*;‡ and of Lee *On Opium and the Mydriatics*.||

The further investigation of these subjects offers an attractive field for future observers, as well as to experimental physiologists. The object of this paper will have been fully attained if it succeeds in drawing more attention to the subject by exhibiting the mass of evidence which has already accumulated to sanction a belief in the mutual antagonism between opium and belladonna.—*American Jour. Med. Sciences.*

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*Remarks on the Prevailing Diseases in the Hospitals, at Nashville, Tennessee.* By HENRY M. LYMAN, M. D. Acting Assistant Surgeon, U. S. Army.

During the greater portion of the last three months Nashville has been isolated by the blockading forces of the enemy, as completely as if situated upon some tropical island beneath an equatorial sun. It is therefore only within the past week that I have received any recent tidings from the medical world of New York. In the meantime we have experienced the "sickly season" of the South, but now the malarious diseases have nearly disappeared, and our hospitals are filled with cases marked by the same familiar stamp which

\* London Med. Rev., August, 1860.

† Edin. Med. Journ., vol. ii. part 1, 1857, pp. 431-435.

‡ Proc. Royal Med. and Chir. Soc., vol. xlii., 1859, pp. 289-308.

|| Am. Journ. Med. Sci., Jan. 1862, pp. 54-60.

impresses itself upon the inmates of our hospital wards in N. Y. at this season of the year. The months of August, September, and October, were very unfavorable to health. Not only did our troops suffer from the effects of malaria, but the citizens also were unusually affected with intermittents, remittents and dysentery. Those who are familiar with the history of the war in the southwest will remember that the winter of 1861-62 was remarkably rainy, and that the rivers overflowed their banks to an almost unprecedented extent. When I arrived here last April, it was by the common people frequently asserted that the approaching summer and autumn would become exceedingly unhealthy, as a consequence of the high water which had prevailed during the winter: an anticipation fully justified by the result. Diarrhoea and remittent fever were the diseases peculiar to August and September; nor was the terrible pernicious fever at all uncommon, though fortunately it was rare in its most fatal form. The force of the disease ordinarily concentrated itself upon the abdominal viscera. A patient would complain of headache, slight chilliness, severe pain in the back and limbs; the skin would assume a bloodless and sallow complexion. Suddenly, the sufferer would be seized with most atrocious abdominal pains, immediately followed by a choleraic diarrhoea, which would soon reduce him to a state of collapse; cold extremities, almost imperceptible pulse, sunken eyes, hippocratic countenance, and a surface smeared with a sticky, stinking perspiration. Applications of mustard, subcutaneous injections of morphine, and the administration of quinine, capsicum, and whisky, always restored the patient to a condition of comfort in the course of a few hours. This form of the disease was never fatal, unless we must include among these cases the imperfect history of an old man who had been employed as a nurse in the wards of Dr. Kelly, Assistant Surgeon, 1st Tenn. Vols. I had occasionally seen him in the hospital, and had remarked the emaciation of his person. One morning, about the middle of August, on entering the dead-house, I found Dr. Kelly in the act of opening the body of this man. He had gone to bed, as usual, the previous evening, among the patients in the ward. No one saw him move, or heard him complain during the night; when morning dawned, it was discovered that he was dead. The contents of his bowels had been evacuated into the bed: they were thin, scanty, and hig-colored. We found the choroid plexuses exceedingly pale; so was the grey matter of the spinal cord. The lungs, were healthy; the heart was soft, pale, and flabby. The liver was of the usual size, but of a lighter color than in health; its vessels were full of liquid blood. The colon was contracted, and the mucous surface of the alimentary canal, from the phyloric orifice of the stomach to the anus, was intensely and darkly congested. The stomach was large and lax, containing nearly a pint of fluid resembling dirty dish-water. The intestines were empty: several small ulcers were located in the sigmoid flexure of the colon, and patches of ecchymosis were scattered at long intervals over the surface of the transverse colon.

Scarcely two weeks has elapsed before I again witnessed a post-mortem examination following another case of sudden death in the wards of Dr. Kelly. It was at the time of the withdrawal of General Buell's army from southern Tennessee, a movement which threw upon our hands all the patients who had accumulated in the hospitals at various points along the Tennessee river. Passing through his wards one evening, after an arrival of this sort, the doctor noticed a young man, about twenty-five years of age, large, muscular, dressed in the uniform of a private, and seated upon one of the beds. He said that he had been *sick with a fever* for three weeks in a hospital at Huntsville, Ala. He was convalescent, and complained of nothing but the fatigue resulting from transportation over more than a hundred miles of railway. Next morning his body lay cold and dead in the position it had occupied when he fell asleep. The base of the middle lobe of the left cerebral hemisphere was slightly softened. The grey matter of the brain was darker than is commonly observed. Points of blood followed the knife on transverse section of the white substance of the cerebrum. The lungs presented a beautiful specimen of health. The left ventricle of the heart was firmly contracted, while the right side of the heart was lax, and gorged with blood. The right ventricle was occupied by a large clot. The pericardium contained about four ounces of fluid. The appearance of the liver was in every respect natural. The intestines were empty, and the calibre of the colon was much contracted. The spleen was of the usual size and consistence. The kidneys were very large, weighing respectively nine ounces and nine and a half. They were purple with contained blood, but otherwise did not exhibit any visible sign of organic disease. The cortical portion, and the tubular portion, were well defined, and properly proportioned to each other. Beyond these appearances we could recognise nothing abnormal in any region or organ of the body.

What killed these men? I incline to the belief that they fell victims to the action of malarial poison in constitutions debilitated by disease and fatigue; yet, if so why was a fatal result not more frequent among the patients who crowded our hospitals? almost without exception they were, in one way or another, suffering from the influence of malaria. Why does one person suffer pneumonia, while another who has been similarly exposed is attacked with pleurisy, and a third, perhaps, escapes with a simple catarrh?

The first week of September was marked by a great aggravation of the symptoms in all cases of disease that fell under my observation. For nearly a month there had been no rain; the daily mean temperature had varied little from 80° Fah. till the last of August, when a north wind and a light shower had cooled the night air to about 60° (the exact memorandum of dates and thermometrical observations was lost during my subsequent illness), rendering, blankets necessary for two nights in succession; but the wind soon reverted to the southern quarter, and the mercury again

rose to a daily mean of 81° or 82°. Patients suffering with chronic diarrhoea immediately became worse; those who were convalescent from remittent fever, experienced a relapse; pernicious attacks, affecting the bowels, were continually occurring; while those nurses and attendants who did not actually succumb, by their straw-colored complexion and debilitated limbs, bore witness to the prevailing presence of a morbid agent from which there was no escape. [It was at this time that I was permitted to observe the symptoms which marked the termination of a fatal case of the algid variety of pernicious fever, occurring in the person of a lady who had been previously much exhausted and anaemiated during a lingering recovery, after confinement in the early part of summer. For two or three days the onset of the disease had been heralded by occasional apparently trifling nervous phenomena connected with respiration. But, at noon, one day, there came a slight sensation of chilliness, which soon passed off. During the latter part of the following night there was a degree of nausea, and some diarrhoea. About eight o'clock the next morning an algid paroxysm suddenly declared itself, and before medical assistance could reach the sufferer, her pulse had stopped, her face was blue, her breath was cold, her extremities were icy. Stimulants, counter-irritants, hot air, and quinine produced a partial reaction though the pulse never returned to the wrist. For a short time recovery seemed probable; the countenance became natural, warmth returned to the surface, and a delusive calm pervaded the frame. But soon the insidious destroyer renewed its attack; the action of the heart continually increased in frequency and diminished in force; respiration became hurried and laborious; clammy perspiration moistened the skin: less than fifteen minutes passed before life was extinct. Death occurred just three hours after the commencement of the pernicious paroxysm. Five days after this I was myself prostrated by an algid paroxysm, supervening upon a masked intermittent by which I had been haunted for eight days. The ordinary routine treatment was powerless in combating this insidious invasion of the disease. For more than two months I had used daily *prophylactic* doses of quinine, and supposing myself sufficiently protected by the drug, had always exposed myself fearlessly to the influence of malaria, often sitting till late in the evening under the trees which shaded the house in which our hospital staff was quartered, and sleeping with the windows of my chamber open to all the night air that could be admitted. Chilliness, and febrile movement of the circulation, had no place among the symptoms of the disease. Quotidian misery, gastric distress, nausea, and physical weakness, were the prominent symptoms which preceded the culmination of the attack. Its onset was sudden, terrible, and unexpected—at the very moment when an icy hand seemed to crush my heart in its grasp, while black night gathered around me, my ears were ringing, and my brain was whirling under the influence of not less than twenty grains of quinine administered eight hours previously.]

Owing to the existence of a "military necessity," the University Hospital was closed on the twelfth of September. The patients, were removed to quarters nearer the centre of the town, and a camp was formed upon the grounds about the buildings. For two months Nashville was a beleaguered city, and the sick were often without diet appropriate to their condition. Strong foraging parties procured a supply of corn and meat, but milk, eggs, butter, fruit, vegetables, coffee, tea and sugar existed only as shadowy memories of the past.

During the latter part of September, and during the month of October, dysentery became remarkably prevalent throughout the town. In the hospitals it usually occurred among patients who were convalescing from remittent fever. It was seldom unmanageable, but yielded readily to the action of sulphate of magnesia administered in small and frequent doses till the tenesmus was relieved, and the stools became copious, when a few grains of opium were sufficient to complete the cure. But I was informed by an experienced physician, long resident in Nashville, that in three instances among his own patients this dysentery terminated with a well marked paroxysm exactly resembling the worst paroxysms of pernicious fever. Two of these cases proved fatal; the third was with the greatest difficulty rescued from death. And yet some of the most distinguished medical men, who for years have practised in this city, assert that malaria does not exist in Nashville. They are fond of attributing the occurrence of pernicious fever—for they do not dispute its fatality during the past season—to the presence of so many soldiers, and to the filth consequent upon crowding camps around the borders of the town. "*Credat Judæus!*" Were I disposed to accept such a theory, it is not necessary to visit the camps in search of filth: I cannot decide whether to prefer the alleys of Nashville or the streets of New York!

Reviewing the meteorological history of the past summer, it is interesting to remark the fulfillment of the conditions supposed to be necessary for the production of malarial poison. The spring months were very rainy, and the rivers overflowed their banks. May and June were cooled by frequent showers, but the month of July introduced a season of drought, which is not at an end. Rain has fallen only in slight showers at long intervals; the whole country has been dried and parched by the burning sun, while the rivers have receded to a point not before reached since the year 1839. It has been during the fortnight or three weeks immediately succeeding the showers which have occasionally moistened the surface of the earth malarial influence has seemed most intense. Do not these circumstances lend additional weight to the teachings of Dr Bowling, the learned Professor of Theory and Practice in the University at Nashville, who believes that malaria results from the action of intense solar heat upon watery particles which are hindered from free evaporation, as when the rays of the sun draw vapor from the lower strata of riparian slopes, or from the moist sub-soils which often underlie a sandy surface, or from the sap that is

imprisoned within the trunks of lately fallen trees? It is thus that he accounts for the insalubrity of recent clearings in the wilderness, where the forest trees have been "deadened" and allowed to dry away in the sunshine. I am tempted to inquire if the frequent flooding of the soft pine-wood floors of our hospitals tends to generate malaria among the patients in the wards.

Be these things as they may, the heats of summer are at an end. To us the winds of winter and the advancing armies of the Union bring health and plenty in their train. Once more, to southern soil bright November sky reveals the glory of the North. On every hill-side shines a tented camp, and through all the streets resounds the noise of men and of horses caparisoned for war. Nashville is the centre, and will constitute the base of military operations in Tennessee. Fourteen hospitals are crowded to their utmost capacity: additional buildings will soon be opened for the admission of patients. The record of the approaching campaign will form an interesting chapter in the medical and surgical history of this great rebellion.—*American Medical Times.*

GENERAL HOSPITAL, No. 13, NASHVILLE, TENN., Nov. 26, 1862.

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[From the American Medical Times.]

### *Meeting of the New York Pathological Society.*

#### OVARIAN CYST.

Dr. Emmet presented the portion of an ovarian cyst which he had removed some time ago.

On the 28th of August last I was consulted in reference to the propriety of an operation for the removal of an ovarian tumor, in a case sent me by Dr. W. H. Van Buren. The patient was twenty-four years of age and married; she had had one miscarriage, and gave birth subsequently to two children without any complication; the youngest child was born six years ago. The menstrual flow appeared for the first time at the age of thirteen; it was afterwards regular and free from pain, lasting always a week. The general health from childhood had been particularly good. For nearly a year after the birth of her last child she continued to suffer from tenderness on pressure over the whole abdomen, but it was not severe enough at any time to interfere with the performance of her household duties. About four years ago she first noticed in the right iliac fossa an enlargement, which increased very slowly in size, until within the past six months. On an examination it was found that but little emaciation had yet taken place. A large cyst filled the abdominal cavity, having its origin, as it was then supposed, from a firm, globular, multilocular mass, occupying the region over the right ovary. On passing the finger into the vag-

ina the uterus was found retroverted, neither ovary could be felt, and the tumor only detected well up in the pelvis. The abdominal parietes at any point could be caught up in a fold, and moved freely over the walls of the tumor, except over the multilocular portion. On causing the patient to make an effort (while lying on the back) to rise from her couch without the aid of the arms, the walls of the abdomen seemed to glide freely over the surface of the cyst, and on watching the act of respiration the same fact was arrived at. Under these circumstances, in connexion with the favorable state of the patient, and her great desire for the operation, ovariotomy was deemed justifiable. Early in October she made her arrangements for the operation. In the meantime, since seeing her last, she had become enormously distended and more emaciated, although still hopeful, and in good health. In this condition Drs. Van Buren and Metcalfe saw her with me in consultation, and fully concurred in the justification of an early operation. On Monday, Oct. 13, 1862, at 2 p. m., the patient having been placed under the influence of ether, with the assistance of Drs. Van Buren, Peters, and several other gentlemen, I operated by a small incision in the linea alba. After removing (with a large trocar) a portion of the fluid, I endeavored to withdraw the sac, but succeeded only partially. The fluid was then nearly all drawn off, and the incision enlarged to about six inches; at first no adhesions were found, but as the hand advanced they became both more numerous and firmer, until several bands (nearly as large as the finger) were traced up to their attachment on the surface of the liver. At this stage of the operation it was deemed too hazardous to proceed further with the separation of the sac. As the sac was drawn out for the purpose of attaching it to the abdominal incision its origin was discovered in the broad ligaments of the left ovary, while direct adhesion had taken place throughout the length of the multilocular mass which involved the opposite ovary, and both had firm pelvic adhesions. Several of the multilocular cysts were emptied through a common opening with the hope of freeing a larger portion of the main sac, but without succeeding in the object. In consequence of the pelvic adhesions this portion could not be attached to the lips of the abdominal incision; it was therefore closed with a silver ligature and left. After drawing out all the liberated portion of the large sac a series of link stitches, formed of interrupted silver sutures, was taken across the portion of the sac presenting at the outlet. These sutures were passed about two inches apart, and twisted separately; but by being introduced behind the preceding one each loop included its fellow on each side, and strangulating every portion, effectually guarded against haemorrhage. The portion of the sac external was then cut off close to the suture line. The abdominal wound was closed by a number of deep interrupted silver sutures passed through the lip, sac, and opposite lip; by this means the sac was included between the edges throughout the entire length of the wound. The portion of the cyst left behind was

that extending from the broad ligament on the left side to the liver, and was adherent along its course to the multilocular mass involving the right ovary. At every point where the bands had been broken down slight oozing of blood took place, until after the sac was strangulated; but at the time of closing the external opening this had ceased. By measurement it was found that this sac had contained nearly *eight gallons* of fluid. At half-past four p. m. re-action had taken place, with a pulse of 104. An enema of beef-tea and acet. opii gtts. xx. was then ordered, but within a short time afterwards vomiting occurred, and was followed by a persistent nausea up to the time of death. On inquiry from her friends, it was ascertained that from an idiosyncrasy opium could not be tolerated in any form, thus seriously complicating the case. I was not able to administer by the rectum more than fifteen drops of acet. opii every two hours, without producing violent vomiting and partial syncope. Twenty-four hours after the operation the pulse had reached 134 per minute, and was never subsequently below that point. She continued to a great extent free from pain except over the multilocular tumor. At 7 a. m., on Wednesday, she had a slight rigor, with a pulse of 160; there was no tympanitis, and but little pain on pressure. The bladder had been emptied by means of a catheter every six hours, drawing off each time between eight and ten oz. of urine. On passing the catheter at 10 p. m., Wednesday, with a pulse at 148, the quantity of urine secreted was found to have been diminished to three oz. in six hours. She now began to sink, and the heart's action became too feeble to be detected at the wrist. With a constant nausea she sank, becoming gradually both blind and deaf, and died on Thursday, at 3 p. m., seventy-two hours after the operation. A post-mortem examination could not be obtained. The case is an interesting one in a diagnostic point, as all the rational symptoms presented seemed to indicate an absence of adhesions, from the fact that the bands in front were of a sufficient length to allow the abdominal parietes to glide freely over the surface of the sac.

Dr. Sands did not think that adhesions of these cysts to the liver were frequent, and alluded to the case recently reported by Dr. Parker where such a state of things existed.

Dr. Hinton was inclined to think that the cause of vomiting could be better explained by the known sympathy which existed between the stomach and uterine organs than by any intolerance for opium. He believed that in most of the cases of ovariotomy vomiting was one of the latest symptoms.

Dr. Peters had witnessed the operation, and was firmly impressed with the fact that it was not advisable to break down adhesions, even if they were but slight. In all such cases he was of the opinion that it was best to evacuate the sac and close the wound.

Dr. Finnel, in relation to the remark made by Dr. Hinton, stated that, in most of the cases of ovariotomy reported to the Society, vomiting was a prominent symptom whether opium had been used or not.

Dr. Emmet stated that he had had charge of four or five cases operated upon by Dr. Sims, but in neither one of these was there more vomiting than was usual after the anæsthetic.

#### FIBROUS TUMOR OF THE UTERUS.

Dr. Prince exhibited a specimen of fibrous tumor of the uterus, removed from a young woman, aged 25 years, on the Saturday previous. The patient first menstruated at the age of 13 years, and continued regular, though the flow was always propuse until two years since. Then she ceased to menstruate for four months, at the end of which time she was seized with profuse hæmorrhage, which, though it gradually grew less, never entirely disappeared up to the date of the operation. At each catamenial period the amount of hæmorrhage was greatly increased; yet, notwithstanding this great drain upon the system, she continued to grow fleshy. About a year ago bearing-down pains first manifested themselves, and continued at variable intervals over a period of six months, when she experienced a sensation as if something had given way. It is probable that at that time the tumor, which had previously existed in the uterus, made its exit into the vagina. When she consulted Dr. Prince she had never submitted to a vaginal examination, although having been previously under the care of four or five different physicians. Owing to the narrowness of the vagina and the small size of the vaginal orifice great difficulty was experienced in making the examination. A tumor was discovered in the vagina about the size of a large goose egg, attached by a pedicle to the anterior portion of the cervical canal, about an inch within the os. The uterine sound could be passed into the cavity of the womb to the extent of about an inch and a half. She had frequently suffered from retention of urine, owing to the pressure of the tumor upon the urethra; but this symptom was in every instance promptly relieved by the use of the catheter. The vaginal walls and uterine cavity were lined with varicose veins, and when the speculum was introduced blood would ooze out from almost every portion of the mucous membrane pressed upon. The surface of the tumor was found covered with points of ulceration, caused by numerous ruptured veins, and this, together with the condition of the vagina and cavity of the uterus, explained the reason for the persistent hæmorrhage alluded to. The tumor was removed by the ecraseur, a stout piece of catgut being passed around the pedicle. After the mass was separated, however, it was with great difficulty that it could be taken out of the vagina, a lithotomy forceps being required for that purpose. Immediately succeeding the operation, there was considerable hæmorrhage, caused no doubt by the laceration of some of the numerous varicosed vessels, but this was arrested effectually by the use of the persulphate of iron.

The operation, including the time for extraction, occupied full two hours and a half.

## TUBERCULAR KIDNEY.

Dr. Hutchinson presented a specimen of tubercular kidney removed from the body of a child aged  $3\frac{1}{2}$  years. Two years before death the patient was seized with the symptoms of tubercular meningitis; there were febrile exacerbations; pain in the head evinced by the frequent application of the hand to the head and corrugations of the brow; the pulse became slow, and somnolency developed itself, accompanied by strabismus and some convulsive twitchings of the muscles of the face. The treatment consisted in large doses of iodide of potassium. The child remained well up to August last, when the mother in washing it discovered the existence of a decided protuberance in the umbilical region. Being at that time in the western part of the State a physician was immediately sent for, who suspected the existence of malignant disease. Eight days subsequently Dr. Hutchison saw the child himself. He found the abdomen very much distended, the tumor being about as large as the closed fist, and there was decided flatness on percussion extending as high up as the liver, which fact gave rise to the suspicion that the disease might be connected with that organ. There was, also, very marked jaundice, with clay-colored stools. There was very little febrile excitement, and but very little pain was complained of. The child was brought home and died one week after, and but two weeks from the time the enlargement was first noticed. On post-mortem examination the tumor was found situated in the mesentery, the whole of that organ being involved in the disease. The mesenteric glands could not be recognized, neither could the pancreas. The kidneys were largely tubercular, and a tuberculous mass occupied the upper, and posterior portion of the bladder. The liver was fatty, with small deposits on its peritoneal surface; the spleen apparently healthy, and the lungs presented no evidence whatever of tuberculous disease; neither was there any deposit of tubercle in the bronchial glands. No examination of the brain was permitted.

Dr. Jacobi thought that the case was a very remarkable one in two points of view:—1st. The cure of the hydrocephalus, he only having met with three such instances; and secondly, the absence of tubercle in the bronchial glands and the lungs. In that respect, he considered it almost unique. The rule was, when a number of organs were thus affected, that the bronchial glands should contain the largest proportionate deposit, then the lungs, next the liver, spleen, and then the intestinal canal, but last of all the kidney.

Dr. Krackowizer was of the opinion, after careful inspection of the kidney, that it presented an instance of parenchymatous inflammation, which had been transformed into fatty degeneration, inasmuch as only the cortical portion of the organ was affected. This was not apt to be the case in tubercle. He also thought that the appearances under the microscope might be misinterpreted in relation to the question of tubercle. It was very often the case that a cheesy mass examined under the microscope, and found to

consist of detritus, oil globules, and shrunken nuclei, was called tubercle. In some respects this denomination was correct, but these were only changes brought about by the retrograde metamorphosis of tubercle, which is alike common to similar changes in other deposits. In order to draw a line as to the precise character of these deposits, it was necessary to examine those portions where the disease was not so far advanced. In conclusion, he asked Dr. Hutchison if such had been done.

Dr. Hutchison stated that he had not examined the specimen himself, but one, in whose ability for such examinations he had perfect confidence, had decided that it was tubercle. The precise appearances under the microscope were not detailed to him.

Dr. Draper thought, from the appearances of long duration of the disease of the kidney, that the meningitis occurring two years before might have been secondary to it.

#### PENETRATING WOUND OF THE ABDOMEN, WITH PROTRUSION OF THE OMENTUM.

Dr. Hutchison presented a second specimen, consisting of a wound of the abdominal wall, exhibiting a portion of strangulated unreduced omentum, accompanied with a written history.

Jas. Henry, æt. 24, was admitted into the Brooklyn City Hospital on the morning of May 27, 1861. He had received on the previous night, while in a state of intoxication, three stabs from a knife—one in the abdomen, one on the forehead, and one through fleshy part of arm. There was constant vomiting, great jactitation, and a frequent and feeble pulse. The wounds in the abdomen and on the forehead had been closed by a single suture, by a medical man who saw him soon after the injury; he also states that the physician returned something into the belly. The abdomen soon became distended and tender, the prostration increased, the vomiting persisted, and he died about forty hours after the receipt of the injuries.

*Post-mortem.*—The abdominal wound was situated four inches to the left of the umbilicus, and five and a half inches below the left nipple; its direction was downwards, inwards and backwards, towards the abdominal cavity, glancing over the tenth rib; the external opening was two inches in length. On opening the abdomen a portion of the omentum was found lying in a pocket between the internal oblique and transversalis muscles, as is shown in the specimen—it had not been returned into the abdomen. There was a wound in it one-third of an inch in length, and it was in a state of inflammation; the abdomen contained some bloody serum and abundant deposits of lymph, the result of extensive peritonitis; the wound in the forehead was three inches long, extending from the middle of the right eyebrow upwards and inwards, cutting the bone to the extent of an inch and a half, and penetrating the frontal sinus, as shown in the specimen. The membranes lining the sinus was not injured, and it was not known

that the knife had penetrated the cavity until its lining was removed. The wound on the arm was unimportant. The brain and thoracic viscera were healthy.

The case offers two points of especial interest:—In the first place, it illustrates the importance of exercising great care in returning a protruded organ (omentum or intestine), that it be not pushed between the tissues forming the abdominal wall instead of into the cavity. Secondly, a medico-legal question might arise in such a case as to whether the peritonitis which caused death was produced by the strangulation of the omentum in the wound, and hence chargeable to the surgeon, or by the injury *per se*.

Dr. Markoe remarked that the case was a very important one, as a type of a very frequent accident which often presented itself especially to those connected with large hospitals. Not unfrequently cases of this sort occurred. A wound has been received in the abdominal walls, and a portion of intestine or omentum is protruded. A surgeon is sent for, who, as he thinks, reduces the hernia, and closes up the wound. Two or three days subsequent to this the patient is received into the hospital in a moribund condition, with the strangulated portion in a pouch between the skin and muscles. Sometimes, as in Dr. Hutchison's case, the pouch is found between the abdominal muscles. The cause of this accident he was disposed to refer, in the first place, to the want of care in being sure that the protruding parts were fairly reduced into the abdominal cavity, and secondly, to the omission to bring together the deeper parts of the wound by a strong deep suture. The neglect of this cardinal principle of treatment was so common that it was the rule of practice in the New York Hospital to open all wounds of this nature, in order to determine whether or not a pouch had been formed in the attempt to return the tumor.

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### Dialysis.\*

Human ingenuity is advancing the art of chemical analysis with rapid strides. It is becoming no easy matter to keep oneself at all *au niveau* with the discoveries in this department of science. While yet fascinated with the beauties and subtleties of Spectral Analysis, our attention is claimed for another analytical discovery, less beautiful it is true and less subtle, but susceptible of much wider application, yielding results of greater practical value, and therefore possessing more immediate interest to us as medical men. We allude to the discovery of Dialysis, which we owe to Mr. Graham, the present Master of the Mint. It may be fairly described

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\* "Graham on Liquid Diffusion applied to Analysis," *Royal Society's Transactions* for 1861, Part I. "Redwood on Dialysis," *Pharmaceutical Journal* for April, 1862. "Daubeny's Lectures on Agricultural Chemistry," *Gardeners' Chronicle* for December 7 and 14, 1861.

as a kind of royal road or short cut, enabling us to arrive at analytical results previously unattainable, or attainable only by processes far more complicated, far more open to fallacy. Except in rare instances it employs no chemical reagents; it achieves its end merely by availing itself of certain physical properties inherent in the substances to be analyzed. Our readers may possibly welcome an account of the principles of this new analytical process, the mode of its practical application, and the peculiar, valuable results it enables us to attain.

Dialysis may be defined as analysis effected by liquid diffusion—in other words, the separating of liquid substances from each other by taking advantage of their different rates of diffusibility under particular circumstances. Our knowledge of the laws of liquid diffusion was exceedingly imperfect up to the summer of last year, when Mr. Graham published the results of his elaborate researches on this subject. So much of these results as is necessary in order to understand the principle of dialysis, we will endeavor very briefly to explain.

First. There is a great difference in the diffusibility of different substances in the liquid state, just as there is in the gaseous state. If by means of a pipette we convey a solution of any substance (a salt for instance) to the bottom of a jar of distilled water so as to form a distinct stratum, and then leave the jar undisturbed in a uniform temperature, the dissolved salt will always diffuse into the superincumbent water at a certain rate within a certain time. This rate will vary with the nature of the medium into which diffusion takes place; if, for instance, some other fluid be used instead of water. Briefly expressed, the fact amounts to this—that “different substances in solutions of equal strength diffuse unequally in equal times.” (Redwood.) For instance, common salt diffuses into water twice as fast as Epsom salt, and this latter twice as fast as gum Arabic. Again, if instead of a single substance we convey a mixed solution of two or three substances to the bottom of the said jar, these substances, notwithstanding their mixture, will still maintain their respective rates of diffusion, the more diffusive body traveling most rapidly and showing itself first and most largely in the upper strata of superincumbent liquid. Hence, what in the case of a single body is mere diffusion, in the case of two or more bodies mixed together is a diffusive separation of them from each other. Such separation of them will be more or less complete in proportion to the difference between their respective diffusibilities.

Secondly. Between highly diffusive substances on the one hand, and feebly diffusive substances on the other, Mr. Graham has established some important grounds of distinction. The only one, however, which concerns us at present is this—viz., that the former affect the crystalline condition, while the latter are not crystallizable, and have, further, the peculiarity of becoming gelatinous when combined with water. Hence, highly diffusible substances he classes together as “crystalloids,” and feebly diffusible ones as

"colloids" (from *collin* or gelatine, the type of the class). Among the colloids are hydrated silicic acid, hydrated alumina, and other soluble metallic peroxides, isomorphous with the latter body, together with gelatine, albumen, starch, dextrin and the gums, caramel, vegetable and animal extractive matters.

Now, it is characteristic of the bodies just mentioned that, while they are more or less permeable to crystalloids, they are wholly impermeable to other colloids like themselves which may be in solution. For instance, suppose a layer of firm jelly, or some other colloid of a more convenient nature (such as an animal membrane) to be interposed between water on one side, and a mixed solution of common salt and albumen on the other, it will wholly intercept the albumen, but will allow the salt freely to diffuse through its substance into the water on the opposite side.

It is plain, therefore, that although, as was above shown, simple diffusion into water will partially separate mixed bodies from each other, a far more complete separation will be attained by causing the diffusion to take place into water, not directly, but through an intervening membrane, such as a bladder or sheet of parchment. And this is just what is done in dialysis, which is nothing more than the diffusive separation of crystalloid from colloid bodies through a septum of gelatinous matter, the septum allowing the passage of the one, not of the other. The apparatus needed to conduct this process is the simplest possible. It consists of (1) a basin or deep dish containing three or four inches of pure water; (2) a "dialyser," which is merely some kind of membranous septum secured by a bit of string around a light hoop of sheet gutta-percha, so as to form a vessel like a tambourine. Of all the substances yet used for dialytic septa, the most convenient has been found to be the "parchment-paper" made and sold by Messrs. De la Rue & Co. Care must be taken that it is not porous. The mixed fluid to be dialysed is first poured into the hoop upon the surface of the parchment-paper to the depth of half an inch or so. The dialyser is then floated on the basin or dish of water, into which the crystalloid constituents of the mixture gradually diffuse, the colloid constituents remaining behind. Mr. Graham found that half a litre of urine, dialysed for twenty-four hours, gave its crystalloidal constituents to the external water. The latter on evaporation yielded a white saline mass, from which urea was extracted by alcohol in so pure a condition as to appear in crystalline tufts upon the evaporation of the alcohol. Professor Redwood observes that ordinary septa can only be used in dialysing aqueous solutions; a septum suitable for dialysing alcohol or ethereal solutions not having yet been discovered. Some form of collodion, he suggests, may possibly answer the purpose.

The process of dialysis admits of some very important practical applications, to which we will briefly allude. (1.) It permits of the isolation of various chemical substances in a state of purity in which we were not previously aware of their being able to exist.

For instance, chemists had hitherto never succeeded in obtaining a perfectly pure solution of silica. The solution of it, obtained by treating silicate of soda with hydrochloric acid, was not pure; it always contained a certain quantity of hydrochloric acid and chloride of sodium, which resisted all further attempts at separation. But by subjecting the said silica solution to the process of dialysis, the acid and salt, being crystalloids, diffuse out, while the silica, being a colloid, remains behind dissolved in water and perfectly pure. In like manner, dialysis enables us to obtain solutions of peroxide of iron, alumina, and several other bodies, perfectly free from the salts or other chemical agents hitherto indispensable to their solution. (2.) In medico-legal inquiries, it affords a most valuable means of separating arsenious acid and the various poisonous metallic salts from their organic solutions. For instance, let a portion of tissue suspected to contain arsenic be chopped into small pieces, soaked in pure water, and then thrown on the dialyser. At the end of twenty-four hours the arsenic, even if its quantity be infinitesimally small, will have diffused into the external water in a state fit for the immediate application of chemical tests. The poison is thus eliminated free from all organic impurity, and without employing any other agent than distilled water—advantages which any one conversant with the usual processes for separating minute quantities of arsenic will not fail to appreciate. Vegetable poisons, such as strychnine, morphine, and the other poisonous alkaloids, may be separated from their organic solutions in precisely the same manner. (3.) Professor Redwood suggests its application to another purpose, viz., "the separation of the more active crystallizable constituents of vegetable substances from inert colloidal matter, and the production in this way of a new class of medicines, containing the more active principles of plants, partially purified, and in the state of combination in which they exist in nature." Such preparations would occupy an intermediate place between tinctures, decoctions, and extracts, on the one hand, and the pure, active principles which they often contain (such as alkaloids), on the other. The advantages of vegetable remedies in this form would be greater uniformity of strength, certainty of action, and convenience of administration. They would also keep better, and being void of all inert matter they would be *purely medicinal*, which in their present crude state they are not. The difficulties in the way of their preparation would be great, but probably not insurmountable. (4.) It affords a partial explanation of certain points in the physiology of animals and plants hitherto involved in much obscurity. (We say "partial" explanation, because, in all the processes about to be mentioned, a *vital* as well as a *physical* force is at work. At any rate, their full phenomena take place only where life is present; they cannot be imitated outside living organisms.) Professor Redwood instances the processes of absorption and secretion accompanying the act of digestion. The mucous membrane of the stomach and intestines may be compared to a

dialytic septum between the blood on the one side, and the blood-making constituents of food on the other. Dilute liquids taken into the stomach diffuse through, or (as we generally say) are absorbed by, its mucous membrane. The plastic constituents of food, on the other hand, being colloids, "are retained in the stomach, while the act of digestion proceeds under the influence of crystalloids that are dialysed into that organ, and then pass on to undergo new changes connected with absorption, assimilation and excretion." He further observes that "the action of medicines must be considerably influenced by the state in which they exist as crystalloids or colloids. Thus, iron in the state of chloride, sulphate, or other crystalloidal salt, would be diffused through the walls of the stomach; but not so if in the state of a colloid, such as basic chloride or basic nitrate, in which state it would pass into the intestines, exerting its action probably through the entire length of the alimentary canal." When we know more of the comparative diffusive power of different medicinal preparations than we do at present, we shall probably prescribe them with greater success.

Lastly. Professor Daubeny, of Oxford, has shown, very clearly and fully, how and to what extent the principle of dialysis explains certain phenomena of vegetation—such as the transmission of sap through a plant, the separation of its various secretions from each other, and their maintenance in a state of isolation in appropriate receptacles. (1.) The sap is propelled upward through the plant partly by capillarity, partly by atmospheric pressure, owing to the evaporation from the leaves and the partial vacuum thereby occasioned. But it makes its way *into* the plant, in the first instance, by endosmosis through the spongioles of the roots. (2.) The particular compounds secreted from the sap in different parts of the plant are maintained in their state of isolation and purity by the same principle of dialysis. The peculiar juices of plants (starch, gum, oils, &c.) are generally colloids, and therefore have no tendency to pass through the walls of the cells in which they have been elaborated. The different acid and alkaline products, on the other hand, being crystalloids, permeate membrane freely, "but are only temporary constituents or steps in the series of changes which are intended to convert carbonic acid into sugar and starch, and they are consequently got rid of either by exosmosis or else by some other chemical process by which they are converted into glucose or fruit sugar." The principle of dialysis has likewise important bearings on the nature of the ultimate molecules of matter, and on certain geological phenomena. These, however, possess more interest to the geologist and physicist than the physician.—*Medical Times and Gazette.*

*Clinical Lecture on the Treatment of Pneumonia.* Delivered at St. Mary's Hospital, May 10, 1862. By THOS. K. CHAMBERS, M D., lecturer on clinical medicine.

GENTLEMEN : There are three cases of pneumonia under my care in Albert ward this week, to which I have drawn your attention as illustrative of those of the most common phases under which you have to treat that disease in the adult.—No. 1. Frank, uncomplicated, double pneumonia, in a temperate, robust man ; excessive dyspnoea. Cured by venesection, jacket poultice, food every two hours, wine. No. 2. Pneumonia of upper and lower lobes of right lung, very slight in left lung, in a broken-down old man. Cured by cupping in front, jacket poultice, food every two hours and wine. No. 3. Congestive pneumonia of one lower lobe in typh fever. Cured by half-jacket poultice, cupping below scapula, food every two hours, wine, and bark.

(*The details of the cases are omitted here to save space.*)

In pneumonia a terribly vital organ is smitten, and so far as the disease extends the destruction is total. A consolidated or even congested piece of pulmonary tissue is impotent to fulfill its functions, and yet that those functions should be fulfilled is essential to animal existence. It is easy therefore to see that the gravity of the pneumonia is in a direct ratio to the quantity of lung involved. The degree or form of the inflammation or condensation is of much less moment, so far as immediate danger is concerned, than the extent of tissue over which it is spread.

Hence comes the importance of having some ready and effectual means at hand of checking the march of the inflammation to fresh parts. If we can do this, we contribute more certainly to the patient's life than if we regulate, however favorably, the progress of it in already affected places. No means is so readily applied, so immediate in its operation, as blood-letting. Its action has not to be waited for, like that of drugs in medicinal doses, but begins at the moment of application. That is a great point where time is so valuable. I believe also that it is the most powerfully effectual of the agents at our disposal, and that, rightly used, it is the saving of many a life in pneumonia.

The beneficial action of blood-letting in pneumonia is mechanical. It is more a question of hydrostatics than of physiology. The pathology of pneumonia is as follows : By the temporary death of a portion of the lungs, the blood cannot be quickly enough passed onwards through their tissue ; it can run freely as far as the right side of the heart, but there it is stopped ; the throng pressing onwards from behind makes matters worse, and thus the balance between the venous and arterial heart is destroyed. You can feel the apex of the organ beating strongly against the ribs, the muscular action being excited by the presence of an unusual amount of venous blood ; yet the artery at the wrist is at the same time striking your finger with an imperfect, weakened force.

Take away some of the blood from the veins, and the balance is restored—the pulse becomes “freer,” as the technical phrase is ; that is to say, the heart being relieved of the undue crowd in the right side, is not arrested in its contraction, but is able to close upon its contents, and supply them steadily to the arteries.

The advantage of general and local blood-letting is of identically the same nature, though they differ somewhat in degree, and are diversely applicable. Where the patient was, previous to his current illness, in vigorous health, actively digesting his food, and actively renewing his tissues, he will bear, and easily repair, the detraction of a good large quantity of blood ; and a good large quantity of blood is most conveniently drawn from the arm. To get, therefore, the full advantage of the remedy, and be on the safe side, you should practice venesection. But if the pneumonia has come on a person previously an invalid, or in weak health, you fear for the possible bad consequences of your treatment, and you cast about for some means of getting the greatest advantage out of the least loss of blood. This is obtained by cupping the region of the heart. Your six or seven ounces taken from thence, in a delicate invalid, seem to produce a corresponding effect to twelve or fourteen let from a vigorous man’s arm. But there are practical inconveniences in cupping to a large amount in this situation. You are obliged to cut deep to obtain a good flow, and deep cuts cannot be stopped easily, but go on oozing unperceived into the poultice which, as I will instruct you presently, is to be put round the chest.

Remember that in letting blood you are wielding a dangerous weapon. While from a mechanical point of view nothing can equal the aid it gives, at the same time its more remote or physiological action is hurtful. The shrewd comedian tells us, “necesse est facere sumptum, si quæris lucrum ;” so that if you have gained the inestimable boon of a restoration of balance in the circulation, and a consequent relief of dyspnœa and an arrest of the progress of death in the lungs, you must not complain if some evils attend the process. The mere loss of so much “liquid flesh” is in itself an evil, but a minor one ; of greater import is the increased proportion of effete fibrin and water which it induces, the diminution of red globules, and the consequently diminished power to bear up against the destruction, however temporary, of so much pulmonary substance.

Judge, therefore, of the necessity for this treatment by the balance between the heart and the arteries. If the apex of the former organ strikes strong while the pulse at the wrist is defective, act freely and confidently. If, on the contrary, the ventricles are weak while the pulse is full, large, and rapping, be cautious in what you do, and if you draw blood at all, let it be by cupping the chest.

You will find in some lectures on medicine rules about blood-letting in pneumonia attempted to be deduced from the supposed degree of consolidation of the pulmonary tissue. These rules are

singularly foolish and inapplicable to practice. They say you should bleed so long as you know that the lung is in its first stage of consolidation, (*i. e.*, congestion), as indicated by fine crepitation and incomplete dulness; and that you should not bleed after it has once become so completely consolidated as to admit no air into the finer bronchi—a state declared by the sound of coarse crepitation and complete dulness. Such a rule is quite useless at the bedside, and will often prevent your employing active practice in cases where it is urgently required. In the first place, in a majority of cases fine crepitation is masked by the mixture of coarse, produced by the presence of catarrhal mucus in the larger bronchi, especially in the catarrhal pneumonia of young persons. If you wait till you can hear distinctly fine crepitation, you will wait too long. Then, again, the dulness of congestion is not necessarily incomplete, as you may satisfy yourselves by examining a case of transitory congestion in continued fever, which is often very absolute, though it is so transitory that a mere change of position may remove it in twenty-four hours. Then, again, a slight collection of serum in the pleura may make the lower lobe dull at the very commencement of pneumonia, and prevent your bleeding at a very early stage, if you were to follow the rule I quoted. But the most truly important consideration and the most serious objection to the rule is, that you may have all stages of partial tissue-death going on at the same time: one lobe, or one part of the lobe, may have advanced even to yellow hepatization, while another part is entering into red hepatization, and in a condition which most would agree is that capable of benefit from letting blood. Your best guide to the necessity will be the dyspnœa, and your best check, the balance of the heart and arteries, as I have explained already.

Remember now what I told you about bleeding in a former lecture on "Anæmia and Blood-letting"—*be careful to supply material in the place of that which you are taking away.* Let the patient be fed with beef tea or milk every two hours, just as if he had typh fever. I mention this part of the treatment next to the bleeding to remind you of the close connection which there is between the two, and because of the immense importance of it to your success, whether you elect to bleed or do not.

I now come to a direct restorative, about the use of which at all times you need have no manner of hesitation. You can always, without any exception of age, sex, condition, cause, or complication, follow a treatment to which I attribute more power of saving the lives of pneumonic patients than to any other, and which you see me apply in all cases; I mean, the enveloping the chest in a large bath-like poultice. The action of warmth and moisture on animal tissues tends directly to increase their vitality. You may *see* with the naked eye a healthy surface of skin under their application renew its life; it empties itself quicker of its pale, livid, venous blood, and glows with a fresh access of the bright arterial stream; it swells up elastically with fresh juices; it is

more delicately sensitive when used for the purposes of touch ; at the same time it feels no pain, but, on the contrary, an exquisitely pleasurable calm. You cannot see this renewal of life in internal organs ; but you may infer that what takes place in one tissue takes place also in another with modifications dependent on distance and other difficulties of application. And you may infer it also from the results ; for you find the dyspnoea diminished, the breath being easier drawn in spite of the weight of the poultice ; the hot, fevered skin becomes moist and active, and soon the ribs begin to move again and air is re-admitted into the previously paralyzed lung-tissue. These effects are the most strikingly shown in the case of infants, whose thin chest-walls are rapidly and efficiently permeated by the influences of the poultice, and in whom also this remedy is the only one really safe and invariably necessary. I cannot speak too strongly of the importance of your adopting it, and letting all other treatment be rather rejected than this directly restorative agent.

The poultice is best made of bruised meal, because that keeps moistest. It should be spread half an inch thick at least, on a cloth or flannel, as broad as the circumference of the thorax. If any portion of the upper lobes is inflamed it is essential, and even if only the lower lobes are inflamed it is prudent, that it should be deep enough to cover the whole chest from the collar bones to the hypochondria. Lay the patient on it on his back, and fold it across the front until it meets. In adults it will usually keep in its place of its own accord ; but in children it is useful to have a tape stitched on in front and a tape behind, which you tie over each shoulder in the manner of a shoulder-strap, otherwise the little prisoners wriggle out of their soft breast-plates. When once you have got it *in situ*, keep it there, and desire the nurse, on pain of dismissal, never to take it off till another hot one is ready to go on.

In low fever the continuous poultice somewhat stands in the way of the cool sponging. But, in practice, this last important part of the treatment becomes less necessary at the period when congestion and pneumonia occur ; the skin has then become cooler and more active. Besides, the poultice often takes its place by softening and suffusing with a gentle perspiration the whole body. I have often had pneumonic patients complain of the way in which it makes them sweat.

Alcohol, especially in the form of port wine, is very useful in treating pneumonia. Even in hearty temperate persons, when you are going to bleed, it is desirable to give a little, as was done in Case 1. A glass of hot negus before the operation makes it safer ; and whenever you observe the nervous system prostrated by the extent of the disease, so as to produce tremor of the hands, quivering of the tongue, delirium, dry brown tongue or a tendency thereto, throw in a little wine from time to time. In old persons, especially in the upper classes, who have been used to good living,

and in persons of all ages who have indulged too freely in alcoholic liquids (like Case 2), you need not wait for any symptoms as above described, but begin with wine immediately. In children it is not required, and they get well quicker without it.

In the pneumonia of typh fever, position is of great importance. As long as the walls of blood vessels retain their natural elasticity, they are able to resist the gravitating force which acts, of course, on the blood as on all matter; but when their life is lowered in disease, the elasticity is the first vital property which suffers, and the blood then gravitates towards the lowest part of the viscus. This is especially the case in typh fever. Lay the patient, therefore, on the side opposite to that effected (as was done in No. 3), or even on his face for a time, if both are affected; and thus the very force of gravitation, which you feared as an enemy, becomes a friend, by withdrawing the congestion from the weaker point. This boy was cupped on the side. You need not be afraid of a small loss of blood in typh fever, where an important viscus requires it. A large portion of the vital fluid you take away is poisoned and dead already, and unfit for the purposes of life; so that you are not robbing the patient to the full extent of the quantity drawn. You saw this lad was much more lively after his cupping than before. It is better to draw it locally than generally, because local benefit is expected from it, and not general.

I always abstain from giving purgatives in pneumonia. My reason is, because I have observed that patients who have diarrhoea at the same time generally do very badly; and if natural diarrhoea does harm, I infer that artificial diarrhoea does harm also. I prefer to produce constipation by opiates, where it does not already exist. If the rectum gets blocked up with feces, it is easy to wash it out with warm gruel.

Blisters, also, have seemed to me to do harm in a few cases where I have seen them employed before the patient came under my treatment. It is usually non-medical persons who put them on, under the general idea that they are good for a cough with pain in the chest.

Nothing has been said about antimony and mercury, drugs formerly much used in pneumonia. They are destructives, and I cannot see that there is anything to be destroyed in this disease, or that there is anything whose destruction would aid the employment of direct restorative treatment. When I used them, I was frequently obliged to leave them off on account of bad symptoms attributable to their agency, and I always felt doubtful if success in prosperous cases could be traced to them. But in all diseases which have been under treatment before yours, pray never let a word escape your lips, or a thought dwell upon your minds, about the patient being worse for the means previously employed. Most probably the harm done even by the most unsuitable drug is inappreciable; for a sick man is a tougher animal than we often give him credit for, and will stand a vast deal of faulty physic, and it

can hardly be but what some of the treatment has added to his chances of life more than if he had been let alone. Besides, we are all infinitely fallible, God knows, and it is not for us to judge of circumstances we have not seen.—*Lancet*, Aug. 16, 1862.

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*Clinical Instruction in the Hospitals of Vienna.* By E. L.  
HOLMES, M. D., of Chicago, Ill.

One of the most popular clinical lectures in Vienna is Prof. Oppolzer. One can scarcely conceive a more practical plan of imparting medical knowledge than that adopted by this distinguished lecturer. Gifted with great fluency of speech and possessing a wonderful degree of erudition in everything pertaining to the past and present history of medical literature, united with an immense experience in the observation and treatment of disease and in public instruction, he is able to make his lectures interesting and of the greatest good to his listeners. Not only students, but old practitioners testify by their continued presence to the great merit of these lectures.

Every patient, as soon as he enters the wards of the lecturer, is assigned to the care of a student, whose duty it is to make a careful examination of the symptoms, and keep a record of the case as long as it remains in the hospital; at the clinic the professor questions the student in presence of the class in everything pertaining to the case, calling the attention of all to every important point and comparing it with other similar cases in the ward. At the same time, the secretions are carefully examined by means of the microscope and test tube.

The clinics are usually about an hour and a half long, and are given six days in the week.

The clinics of Prof. Scoda are also worthy of notice. Although he is much less fluent and generally considered less interesting in his manner than Prof. Oppolzer, his lectures are none the less instructive. They are principally upon diseases of the chest. There are a sufficient number of patients and ample opportunity for every student to examine each patient for himself. Private courses of instruction in auscultation and percussion are given by Professor Scoda's assistant.

These clinics are followed by those of Professors Schuh and Dumreicher in the surgical wards. The general plan of instruction is the same as above described. Everything relating to operations, to the diagnosis and treatment of injuries and surgical diseases, is carefully taught, with cases enough to illustrate every important point. I should infer, after considerable observation, that injuries requiring surgical treatment, especially fractures, were rare in Vienna as compared with our own large cities.

The clinical lectures in obstetrics are particularly important to

the American student, who has little opportunity of receiving clinical instruction in this branch of his profession in America.

There are upon the average, I think, eight births a day in the hospital. The patients are delivered in a room assigned for the purpose, and then carried to the wards, where they remain nine days, or until they are able to leave. The class is carefully instructed in the mode of making examinations per vaginam, and of learning the position of the foetal head and body during labor. The whole process of parturition is thus learned by repeated observation. There are also private courses on the use of instruments and "turning," the cadaver, from which the viscera have been removed, serving the purpose of a manakin. A dead foetus is placed in different positions in the pelvis, which the students are to examine in turn and give their diagnosis. After this the operation of turning or the application of forceps is made, and the foetus delivered. When the student has taken this course on the application of instruments, he is permitted to use them, when necessary, on the living subject in the lying-in wards. One thus has an opportunity of watching several hundred cases of labor, of having a small number under his own care, and of learning practically the use of instruments; he is also taught the duties of the lying-in room in reference to the mother and infant during the nine days subsequent to delivery.

The clinics of Prof. Hebra on diseases of the skin are one of the most popular courses in the hospital. In his wards are nearly two hundred and fifty patients, and with this large number of cases he is able to illustrate all the important points in the commencement and progress of every form of skin disease. The wards are open to the students, but Prof. Hebra usually delivers his lectures in a small amphitheatre, the patients being brought before the class. After he has called the attention of the class to the points worthy of notice in each case, the patient passes from one student to another, thus enabling each to examine him more closely. The male patients are wholly naked at the clinics; the females being dressed in loose garments, to permit a ready examination of any part of the body. These clinics are given five days in the week.

The lectures of Prof. Sigmund on syphilis are very popular. There are two or three hundred cases in his wards. A careful examination of these, in connection with the lectures of the Professor, will make the student more familiar with this disease than he can be after years of reading and observation in private practice.

Students interested in diseases of the eye will find the clinics of Professors Arlt and Jäger interesting and instructive. In these wards are about two hundred patients. The student has ample opportunity of acquiring a knowledge of the use of the ophthalmoscope, of witnessing a large number of operations, and of acquiring skill in the diagnosis of ophthalmic disease.

In addition to the ordinary clinics as above described, there are private courses of instruction in the clinical study of every class

of disease, including treatment, operative and medical. These courses are scarcely less beneficial to the student than the others, as they give him an opportunity of reviewing what he has already learned from the different professors.

I cannot close this short notice of the clinics of Vienna without alluding to the facilities given to the student for the study of pathology. There are, upon the average, five *post-mortem* examinations a day, at which students can be present, notice always being given, when a patient dies, of the hour at which the autopsy will be made. Generally, however, the students prefer to be present at the lectures of Prof. Rokitansky, at which all the morbid specimens of diseased organs collected each day are exhibited. The private course of Rokitansky's assistant is very useful, since he not only demonstrates all the fresh specimens, but visits the great Pathological Museum, for which Rokitansky has so long labored, and explains all the preparations, illustrating the effects of the disease of each organ.

The Pathological Museum may justly be regarded with pride by the Medical School of Vienna. The building is a large fire-proof structure of stone and brick, erected at a cost, as I was informed, of \$40,000. The Museum is a large hall, tastefully fitted and ornamented. The other portions of the building are used for the reception of the dead, previous to burial, for dissections, for the ordinary *post-mortem* examinations of the hospital, and for the examination of cases of sudden or violent death in the city. Each Professor has a private room for the examination of his own cases. Whatever may be said of the advantages offered by other cities for the study of surgery or medicine, I think no city can claim for its hospitals better facilities for the study of pathology than can be found in Vienna.—*Chicago Medical Journal.*

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### Deaths from Chloroform.

The following notice, characteristically French, is from the *Gazette Médicale de Lyon*, a journal long an advocate for the use of sulphuric ether :

“ We are not wearied with reporting, any more than surgeons are with reproducing, the deadly action of an agent which was once called beneficent. A sense of duty and the hope of opening eyes so obstinately shut, stimulate us in an endeavor at which we work almost single-handed. If anything could cool our ardor, it certainly would be the spectacle of the strange and growing apathy evinced by the authors and reporters of these surgical mishaps. We present our readers with a new and improved formula for these narratives, which, latterly and on too many occasions, have been multiplied in English surgery. ‘A young girl, seventeen years old, was received at the hospital on the 23d of July last, and died on

the 5th of August. She had received an injury by falling on an iron bar, and a short but painful operation was judged necessary. She consented to be put under the influence of chloroform, and as she was very nervous, great precautions were taken in its administration; but, in consequence of a feeble and fatty heart, which was not guarded against, she died a short time after the commencement of the inhalation of the anaesthetic.—*British Medical Journal*, Ang. 16, 1862.' Here, then, is a young girl of seventeen, who, instead of being put to sleep, dies in a few minutes. Is any one disturbed by the event; is even any astonishment felt? Not the least! Her heart was 'feeble and fatty,' and they 'hadn't guarded against that.' This clears them all. Surgery is justified, and the operator passes on to the next."

In the *Medical Times and Gazette* of November 1st, 1862, the full details are given of an inquest held upon the body of a man dead from chloroform. His thigh was to have been amputated, but whilst the operator was selecting his knife from a neighboring table his patient expired. The gentleman in whose hands this case occurred is spoken of as "one of the best surgeons in Gloucestershire," and it is clear that he used every precaution and care. After stating to the coroner that Dr. Snow's inhaler was used, in order to "reduce the inevitable risk of chloroform to a minimum," he says, "had it been possible to examine all the organs separately before death, as I did after, I should have concluded that, of all patients I had ever seen, he was the very one who might fairly have been supposed to have taken chloroform with the greatest impunity." "That such a person should so have died, demonstrates that there are individuals in whom unconsciousness from chloroform is necessarily incompatible with life. At the same time a medical man is unable to select such from the general mass."

In the same Journal, three weeks later, Dr. Charles Kidd, best known for his persistent efforts to prove chloroform an absolutely innocuous agent, informs us that there have been "two deaths at one London hospital, within a few days, very recently, which were not noticed by the journals." We might add to these a fatal case occurring at Washington, within the last two months, in a Government hospital, of which no public mention has been made.

Is it strange, however, that incidents like these should be of frequent occurrence, when, in face of all the dangers admitted by the users of chloroform, the latest and most pretentious work on Surgery published in England, devotes an article to the subject of anaesthetics, only alluding to sulphuric ether in a single line, which barely mentions its connection with their early history, and instead of sounding the alarm which is everywhere felt, fills up its pages with a consideration of certain laryngoscopic demonstrations of the phenomena of stertorous breathing, and hardly deigns to deal with so common-place or practical a matter as the method or means of inducing anaesthesia?

If the facts which already exist are faithfully collated by the

committee of the Royal Medico-Chirurgical Society, recently appointed to investigate deaths from chloroform, the hopes of our French contemporary can hardly fail to be encouraged, and the prejudices with which we in Boston have been charged, proved to be founded on no local or narrow-minded grounds.

*Narrow Escape from Death by Chloroform.*—Since the above was written, our attention has been called to the following case, reported in the London *Lancet* for November 15th. The patient was about being operated on for the removal of a bulbous nerve from a painful stump:

“Chloroform was administered on the 14th, and when complete insensibility had been produced, Mr. Cock commenced his incisions on the stump. At this moment the patient was observed to become suddenly pale, and the breathing instantly ceased; the pulse was found also to have stopped. Immediately the most active efforts were made to restore animation. Cold water was dashed upon the face and chest without avail. Mr. Cooper Forster used artificial respiration by compressing the chest laterally; the lower jaw was forced downwards, and the mouth kept widely open; whilst the tongue was seized by Mr. Bryant, and held out of the mouth by means of a flat forceps. In the course of two or three minutes the artificial respiration succeeded in producing a sigh, and as the pulse commenced to beat, it was sufficient encouragement to continue it. In three or four minutes more it was quite successful, and the breathing and circulation were established, the color returning to the cheeks. There can be no doubt that if the most energetic means had not been at once resorted to, the result would have been fatal. The great functions of respiration and circulation appeared to cease simultaneously. It is more than probable that the pulse was the first to give way, and that syncope preceded the asphyxia.

“This makes the sixth or seventh case we have now seen of nearly fatal issue within a definite period of time, and the result of continued experience seems to prove that the best chance is held out for the safety of the patient by opening the mouth wide, pulling the tongue forward to free the glottis, and then actively employing artificial respiration, as was practiced here. If matters still remain doubtful, the forefinger should be introduced far back into the throat, to ensure that the glottis is not closed by its valve.”

[*Boston Med. Journ.*]

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### *Destitution in the Manufacturing Districts in England.*

Respecting the numbers of destitute persons, we have but too accurate information from the report of Mr. H. B. Farnall, the Special Poor Law Commissioner to the Manchester Relief Committee, published in the *Times* of October 28:

“My tabular report for this week, on 24 unions in the cotton

manufacturing districts, shows you that there is an increase in the number of persons receiving parochial relief, as compared with the number so relieved last week, of 9376 persons.

"There are now 186,219 persons receiving parochial relief in the unions adverted to; in the corresponding week of last year, 43,157 were so relieved; there is, therefore, an increase of 143,062 persons in the receipt of parochial relief, or 331.5 per cent.

"Of the above 186,219 persons, 26,248 are able-bodied men.

"The total weekly cost of out-door relief is now £11,126 10s, 9d.; in corresponding week of last year it was £2185 17s.; there is, therefore, an increase of £9440 13s. 9d., or 431.9 per cent.

"The average percentage of pauperism on the population of those unions is now 9.7 per cent.; in the corresponding week of last year it was 2.2 per cent.

"The average amount of out-door relief per head per week in these unions is now 1s. 4d., and the lowest is 1s. 0½d., the highest 1s. 8½d.

"On the 21st I reported to you that, during the six preceding weeks, the increase of persons in the receipt of parochial relief in the above union was 35,668 persons. This seventh report gives an additional increase of 9736 persons, so that, in seven consecutive weeks, 45,404 persons have become paupers in these unions.

"I am enabled to state that 47 local committees, formed in the cotton manufacturing districts for the distribution of charitable aid, were, at the date of their reports to me, relieving 174,317 persons; but since the reports were dated distress has increased, and a few other local committees have been formed, so that I have reason to believe these local committees are now aiding about 191,300 persons, and that rather more than one-third of those 191,300 persons are at the same time relieved by the guardians of the poor."

Probably, half a million of people will soon be destitute. To furnish them with the bare necessities of life, will cost, at the rate of 2s. 6d. per week, £62,500 per week. Half a crown a week is the lowest sum on which any thing like health can be maintained. It is the estimate of the weekly cost of a child in the poor hovels of Dorsetshire. It will be safer and cheaper to preserve health by a liberal outlay at first, than to wait till fever steps in, and then run to frantic and costly efforts to heal the sick. The way to produce the worst kind of putrid typhus is this—starve large masses of people, let them get rid of their clothes, be unable to get fuel, and huddle themselves together in close rooms in order to keep out the cold. The recipe is infallible, and the records of Preston show that typhus is beginning its ravages. The monotonous diet of meal is also beginning to cause diarrhoea. Surely, in a national emergency like this, the relief needed ought to come from the pockets of the nation at large. If provided from public taxation, everybody pays. As it is the liberal tax themselves, and the stingy escape.—*Med Times and Gaz.*, Nov. 1, 1862.

*Lying-in Hospitals.*—There are some facts stated in a late No. of the *Lancet* (Oct. 18, 1862), which, if confirmed by further statistical researches, should lead to the abandonment of lying-in hospitals. It is said that during the five years, 1857—1861, 129 women were lost in four small lying-in institutions in London—Queen Charlotte's, British, City of London, and York-road.

“ During the same five years, the mortality of the Royal Maternity Charity was 56 out of 18,751 deliveries, or 1 in 335. The great majority of the patients of this charity belong to the most destitute classes, being in the most wretched tenements of the poorest districts in London. Certainly they include a fair proportion of bad cases, in an obstetrical sense. It is not easy to conceive why the deaths should be more numerous in a given number of patients delivered in hospitals than in a like number drawn from the same class of society delivered at their own homes, unless we imagine some special lethal cause to exist in the hospitals. It is too well known that such a special cause does exist. Puerperal fever, although at times occurring in isolated cases, or even presenting some features of an epidemic character amongst the general population, may be regarded as a peculiar product of lying-in hospitals. There can be no doubt that a large proportion of the 163 hospital deaths referred to above were due to puerperal fever of a nosocomial kind. In an excellent paper on Puerperal Fever published by Dr. Tilbury Fox in the last volume of the *Obstetrical Transactions*, we find that the average number of deliveries during twenty-eight years in the York-road Hospital was 208 yearly; and that during this time the total deaths (180) exhibit an average of 3.085, or exceeding 3 per cent. of labors. Such a result is fearful to contemplate; it becomes shocking when we reflect that this sacrifice of human life is artificially produced, and that it may therefore be prevented. If we apply the imperfect data in our possession to the estimation of the death-rate in the four lying-in hospitals during the last five years, we may conclude, without risk of serious error, that the total deliveries did not much exceed 5000. This number has to bear 129 deaths, which gives a death-rate of 2.6 per cent. Now the death-rate of the Royal Maternity Charity during the same five years was barely 3 per mille. Hospital midwifery in London is therefore nearly ten times more fatal than home midwifery. During these five years, the total deaths from puerperal fever in the practice of the Royal Maternity Charity amounted to 14 only, and that out of 18,751 labors. This number of labors conducted in lying-in hospitals would have yielded nearly 500 deaths instead of 56. As it is, confining calculation to the estimated 5000 hospital labors, it may be affirmed that they exhibit an excess of 114 deaths, all of which may be ascribed to inherent hospital conditions.

“ These are facts that cannot fail to suggest serious reflections. In the interest of humanity—in the cause of charity, in whose name hecatombs of unhappy trusting women have been destroyed—we ask, Are lying-in hospitals necessary?”

IN *The American Journal of the Medical Sciences* for the present month Dr. Bowditch gives, in a valuable paper on Paracentesis Thoracis, the results of his observation of one hundred and sixty instances in which this operation was performed, on eighty persons, in all but ten of which it was done by himself. Most of our readers are probably aware that the great success of this operation in Dr. Bowditch's hands is ascribed by him, and no doubt rightfully, to the use of a very small exploring trocar and canula, and suction pump, by which a trifling wound only is inflicted, which heals at once. The whole question of the seriousness or innocuousness of paracentesis thoracis may be considered as demonstrated to depend entirely on the size of the instrument employed. To Dr. Morrill Wyman, of Cambridge, Mass., the credit of suggesting this method is due. The following extracts from this valuable paper are particularly interesting. Dr. Bowditch, having been asked his opinion as to the comparative results of tapping the right or left side of the chest, Troussseau maintaining that pleurisy of the right side is often or always tuberculous, gives his own impression as against the truth of the assertion.

"On referring," he says, "to the brief summaries, and not to original notes of my cases, where I find the sides named in 25 cases, I find that in these the operation was performed with the following results :

	PLEURISY OF	
	Right side.	Left side.
Death.....	4 times.	5 times.
Cure entire, without symptoms of phthisis, except in one, but pleurisy was cured in that .....	9 "	4 "
Doubtful result.....	1 "	2 "
	— 14	— 11

"These data do not exactly answer the question proposed; but if tubercles always or more frequently exist in pleurisy of the right side, we should, *à priori*, anticipate more unfortunate terminations of the operation of paracentesis of the right than of the left side. My experience proves exactly the reverse, and may be expressed, if deduced from the above table, as follows :

"Of 25 cases, 14 were of the right side, 11 of the left. Of the 14 of the right side, only one person is mentioned as having tubercles, and in that the pleurisy was cured and the pulmonary symptoms mitigated.

"Of the persons tapped in the right side, 28.57 per cent. died; 64.28 per cent. were cured, and 7.14 per cent. remained doubtful. Whereas, of the 11 cases of the left side, 45.45 per cent. died, 36.36 got well, 18.18 were doubtful.

"In other words, twice as many have got well from tapping the right as the left; and only half as many have had doubtful results

from operations on the right, as in those where the left side has been tapped.

"Hereafter, if my cases are any criterion wherfrom to judge, I shall regard an operation on the right side as much more favorable than one on the left; which I can hardly think would be the case were all right side pleurisies tuberculous."

As to the questions—when shall the operation be done? and where shall the puncture be made? Dr. Bowditch says:

"Experience teaches me to operate in every case, however recent or chronic may be the attack, provided there is permanent or occasional dyspnoea of a severe character, evidently due to the fluid. I have, of course, more hope of doing good where the disease has not been of too long duration; is uncomplicated with phthisis, or any other disease, and where, moreover, the amount of fluid seems directly the cause of the trouble. I also deem it best to operate in *any*, even latent cases, where the plural cavity gets full of fluid; and if, after a reasonable amount of treatment, the fluid does not diminish.

"The point originally chosen by Dr. Wyman and myself, viz., in a line let fall from the lower angle of the scapula, and between the 9th and 10th ribs, I deem the most appropriate point at which to make a puncture. I have, however, tapped under the axilla, or in the breast, where the case seemed to require it. In selecting the precise intercostal space, on the back, I usually choose one about an inch and a half higher than the line, on a level with the lowest point at which respiratory murmur can be heard in the healthy lung of the other pleural cavity.

"I never wait until *pointing* commences; for then I am sure that pus will be found. If *pointing* without opening has commenced, I do not necessarily tap in that place, as recommended by the older surgeons, but seek the most depending point in the chest. While thus desiring to operate before a *local* distension shows itself, I dislike or refuse to tap where there is contraction of the intercostal muscles; and I am certain of getting fluid only where there is distension or flattening of the same."

And in fine, "The operation like every thing else in all the departments of human life, is imperfect. It cannot cure all. But it has relieved many, and will continue to do so, if surgeons will use it; it has been the prominent cause of relief in many more, and will be so hereafter, if men will theorize less and act more. It has been the sole means of saving life, I am sure, in a few of my cases; and I know some patients have died within the last few years, in New England, as I believe, for want of it, under the care of others.

"It is certainly innocuous, and gives so little pain, compared with the relief it affords, that patients have begged for it to be repeated again and again, as a mere matter of relief. In my opinion it ought never again to be allowed to fall into disuse by the profession. I regard any man who allows a patient to die of

dyspnœa from pleuritic effusion, however great may be the complications with other diseases of head, chest or abdomen, as in the dilemma of him who is either wilfully neglectful of some of the means of relief or cure, now by experience proved to be always at hand, or ignorant of the simple and beautiful operations suggested by Dr. Wyman. To a certain extent I deem my connection with the operation somewhat providential. I had seen, in the earlier years of my practice, men die with sudden dyspnœa, or, after months of obscure disease, die with one pleural cavity filled with serum, and not a particle of other disease; and, finally, I have seen tubercular phthisis follow, after months of debility, from what was simple pleurisy at first.

"Having no surgical tastes myself, shrinking from the simplest operations, and doing nothing of the kind save when compelled to do so, I at times urged surgeons to operate. They declined, and men died. Finally, in cases where I had control, I took the responsibility, and asked the surgeons to do the manual they were more accustomed to than I was. Their plan was incision and dissection down to the pleura, and a suppurating wound as a consequence—a long, painful operation. At last Dr. Wyman's instrument and method came to my notice. I seized upon them as those I had long sought for. As Dr. Wyman and I were the only believers in the operation, it devolved often upon me. The result is the experience which I have given above. And now, as I have often said, I would as readily puncture the chest as I would draw a tooth, or vaccinate a child."—*Boston Med. and Surgical Journal*, January, 1863.

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*Duration of Life in Sweden.*—From official details just published, it appears that the average duration of life in Sweden during the eighteenth century was thirty-four years for men and thirty-seven for women; it is now forty-one and forty-six respectively. This is not owing to any great tendency to longevity, but rather to a diminution of deaths in the earlier stages of life, since only three-twentieths of the number of infants born die in the first year of their existence. Among the causes which have tended to increase the average of life in Sweden, vaccination holds the first rank. A hundred years ago one-seventh of the deaths were attributable to small-pox, while now there is scarcely one death in a thousand owing to that disease.—*Lancet*.

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*A Coroner on Crinoline.*—The Bristol Coroner, Mr. J. B. Grinden, has got into terrible hot water with his fellow-citizens by a remark he made at an inquest lately held on the body of a young woman who had lost her life through her crinoline catching fire.

The learned gentleman is reported to have said, "That absurd practice of distending their dresses was only excusable in one particular case, and whenever he (the Coroner) saw any woman, except those of rank and importance, dressing in crinoline, he took it for granted that they were endeavoring to hide the discredit which, under peculiar circumstances, would attach to a young unmarried woman. Certainly he might be mistaken, and perhaps he was in some instances; but if a woman rendered her appearance hideous, which ought to be becoming, one could scarcely help drawing an inference which he, for one, thought very natural."

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*Letter from Prof. Chas. A. Lee.*

## MINERAL WATERS.

WIESBADEN, Sept., 1862.

Wiesbaden, being situated in a valley, is well protected against cold winds, but the climate is said to be very hot and oppressive in the summer months, and of course relaxing. It seems more eligible for an autumnal or winter residence than most places on the Rhine, or in the neighborhood, and I believe many English families remain here during the winter. Facilities for education are abundant, and the society very good. It must be acknowledged, however, that the native children have not a very healthy look, nor are the people remarkable for longevity; and the resident practitioners acknowledge that fevers and atonic dyspepsia are quite prevalent during the summer months, while dropsical affections, scrofula, bronchitis, and rheumatism are not unfrequent. Pulmonary consumption is said to be rare, while epidemics are unknown.

Homburg is another celebrated watering-place which I visited, and which deserves a much fuller notice than I shall be able to give it. It is less than an hour's distance from Frankfort by rail, and is made up of handsome lodging-houses and hotels, a larger number of very inferior tenements, a splendid cursaal, said to be the finest in Germany, fitted up as usual with a gorgeous saloon, with frescoed ceilings, saloons for gaming, reading-room, restaurant, etc. Then imagine a broad terrace in the rear overlooking the public garden, which is beautifully ornamented with trees, shrubs, and parterres of flowers, with an artificial lake in the centre, and wooded hills in the distance; green meadows spreading out intersected with shaded walks, with a broad carriage road on either side also bordered by trees, and all leading to the four springs, the Elizabethquelle, the Kaiserquelle, the Ludwigs, and the Stahlquelle, nearly three-quarters of a mile distant. Here in a circular inclosure several feet below the level of the walks, may be seen every morning from six to eight o'clock, hundreds of people of all

nations, ranks, ages, and sexes, drinking the water, handed out by women, while near by is the stand for the musical band, which plays during the hours of drinking; as at the other springs already mentioned, a covered orangery near by serves as a promenade in rainy weather.

The Homburg waters are cold salines, muriate of soda being the principal constituent, with an abundance of carbonic acid gas. The constituents of the different springs, however, vary somewhat. The Kaiserquelle contains the largest amount of saline matters, while the Elizabeth contains iron in addition. The carbonic acid gas communicates a pleasant taste to the water notwithstanding the salt and iron—a tumbler full of this water is followed by a sensation of warmth and exhilaration, and it proves alterative, laxative, or purgative, according to the quantity taken; when it does not prove laxative, it acts as a diuretic; the iron prevents any debilitating effects even when it acts on the bowels. Dr. Funk of Frankfort, and Dr. Pagenstecher of Homburg, both gentlemen of the highest standing, spoke to me enthusiastically of the effect of these waters in various forms of disease; and owing to the difference of composition of the different springs, stated that they are suited to a great variety of cases. They represent the waters generally as particularly useful in atonic dyspepsia, torpidity of the bowels and liver, gout, and disordered conditions dependent on luxurious and high living; but as the quantity of iron, common salt, magnesia, lime, sulphate of soda, and carbonic acid gas, differ so widely in the different springs, they represent that much discrimination is necessary in their application, and none but those who have studied the waters closely can prescribe them with safety or advantage. They find that most English patients are benefited in a greater degree by the Kaiser spring, which contains the greatest quantity of saline matter, and this is what we should expect from the known habits of the English. While in Paris I was consulted professionally by an American merchant, who has been suffering from nasal polypus, and a general derangement of health, for a year or two. There was great torpidity of the liver, with more or less derangement of the digestive functions generally; after removing his polypus I advised him, contrary to the advice of his French physician, who told him to go to the Pyrenees, to resort to Homburg, and try the waters for a few weeks. He did so, and at the end of four weeks found his health perfectly restored. The Rev. Dr. McClintock, also of New York, now in charge of the American Chapel in Paris, has derived the greatest benefit from these waters during the present season. On the whole Homburg mineral waters rank among the most valuable in Germany, if not in all Europe. Those of Schwalbach, Schlangenbad, Ems, Weilbach, Soden, Kronthal, Trachingen, Selters, Aix-la-Chapelle, Spa, Kreutznach, Nanheim, Rippoldsau, Wildbad, etc., must be reserved for a future period. Other topics of perhaps equal or more importance, and of a different kind, must hereafter claim our attention.

It is my object to introduce into my letters as great a variety of subjects as possible, and I am aware that I have given to mineral waters a more extended notice than many will consider expedient; still, it seemed to me that a condensed account of the more important watering-places of Germany and France would not be inappropriate to the pages of your Journal. Should you take a different view of the matter, you are at perfect liberty to consign what I have written to the flames.—*American Medical Times.*

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*Venereal Disease in the British Army*—The admissions into hospital among the home troops during 1860, for enthetic diseases, which comprised all sorts of venereal disease, were upwards of one-third of the average strength of the army; at Portsmouth they exceeded one-half. This disease causes a loss in the course of the year to the army at home of at least 8.69 days of the service of every soldier. The average period of treatment amounted to twenty-three days. The Household Cavalry are much the freest from it, and the Foot Guards rank next, owing probably, to their being less frequently moved, and a considerable number of the men being married. The invaliding for this disease is small, but many of the men discharged with broken health and for rheumatism may trace to this source the origin of their disabilities.—*Brit. Med. Jour.*

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*London Sausage Meat*.—We extract, from a recent weekly report of the Medical officer of the City, the following important but nasty truth. After stating that 4525 lbs. of neat and 73 head of game poultry had been seized as unfit for human food, he adds: “The inspectors inform me that much of the diseased meat of Newgate Market finds its way to the sausage-makers of Cow-cross. Last week the inspectors seized the carcases of a diseased sheep and a pig which were being carried to a sausage-maker in that locality. The sheep had died from rot; and the pig was covered with small abscesses, like boils, many of which had burst through the skin, and the rest were still full of matter. Both of these animals were in a shockingly diseased state, and, but for the interference of the inspectors, would have been converted into sausages. I have also to state that the slaughter houses of Cow-cross, which are just outside the City, are a source of great anxiety to the inspectors, from the circumstance that diseased animals are frequently slaughtered there, and brought into the City markets.”—*Med. Times and Gaz.*, Dec. 6, 1862.

## Bibliographical Notices and Reviews.

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*Clinical Lectures on Diseases of Women.* By J. G. SIMPSON, M.D., F.R.S.E., Professor of Midwifery in the University of Edinburgh, etc., etc. Illustrated with one hundred and ten engravings on wood. Philadelphia: Blanchard & Lea. 1863: pp. 510.

These Lectures were delivered by Prof. Simpson at the Royal Infirmary of Edinburgh, and were published in the London Medical Times and Gazette, during the years 1859-'60, '61. The distinguished reputation of the author, and the valuable matter of the Lectures, constitute the reason of the American publisher for issuing the work in a permanent form.

The work is made up of thirty-eight Lectures. These Lectures discuss the more important diseases. We notice too that they are very full, and give advanced opinions. We give the following:

### Lecture I, II, Vesico-Vaginal Fistula.

- " III, IV, V, Cancer of the Uterus.
- " VI, Carcinoma Uterus and Mamma.
- " VII, VIII, Dysmenorrhœa.
- " IX, Closure and Contractions of the Vagina.
- " X, Carnucle of the Urethra, Neuromata of the Vulva—Hyperæsthesia and Neuralgia of the Vulva.
- " XI, Abscess of the Labia Pudendi and the various forms of Vulvitis.
- " XII, XIII, XIV, Surgical Fever.
- " XV, XVI, Phlegmasia Dolens.
- " XVII, Coccydynia, and the Diseases and Deformities of the Coccyx.
- " XVIII, XIX, Pelvic Cellulitis.
- " XX, Peri-Uterine, or Pelvic Hæmatoma; And varix of the Pudendal veins.
- " XXI, XXII, Spurious Pregnancy, or Pseudo-cyesis.
- " XXIII, XXIV, XXV, XXVI, XXVII, XXVIII, XXIX, XXX, Ovarian Dropsy.

### Lecture XXXI, Cranioclasm—Modes of Delivery in Obstructed Labour.

- “ XXXII, Dropsy and other Diseases of Fallopian tubes.
- “ XXXIII, XXXIV, Puerperal Mania.
- “ XXXV, Sub-Involution of the Uterus after Delivery.
- “ XXXVI, Sub-Involution of the Uterus after Amenorrhœa.
- “ XXXVII, XXXVIII, Amenorrhœa.

A glance at these chapters will satisfy the reader that this work may possibly interest him. Some diseases with which almost every one is familiar are discussed at length, while others met with but occasionally are carefully described. To vesico-vaginal fistula the author devotes two Lectures. In these are discussed very fully the different modes of treatment for that very mortifying infirmity. In connection with the treatment we find the following:

“ To give you an idea of the pride, the just pride, with which our American brethren talk of their achievements in this department of Obstetric Surgery, let me read to you, in conclusion, what Dr. Francis, the learned and respected father of medicine in New York, has publicly said with regard to vesico-vaginal fistula, and the application of silver sutures for its cure by Dr. Sims. ‘Prior to the discovery, surgery could do nothing for this formidable class of affections. In Germany, Dieffenbach, Jaeger, Wutzer, and others, had exhausted all their resources in vain. Prolific Germany seems, in this instance, to have been barren. In France, Desault, Dupuytren, Lallemand; and more recently, Jobert, Vidal, and their contemporaries, had been equally unsuccessful, although Jobert claims a success that has never been demonstrated; and I fear that this eminent man, like the late Lisfranc, had scarcely that devotion to practical results which the written annals of medical science demand from all who give publicity to their cogitations and the issues of their practice. In England, their greatest men, their Coopers, their Abernethys, their Lawrences, their Guthries, could do nothing. Nor have I learned that there has emanated from that practical school of medical and surgical learning, which sheds so much glory over Ireland, a single practical idea that can be truly said to have favoured this improvement;’ and then he goes on to speak of the shortcomings of Scotland, and in terms too flattering for me to read here, he speaks of myself, as if in this matter I represented Scotland; averring that here, too, nothing had been done to promote the cure of vesico-vaginal fistula. But, perhaps, Dr. Francis may be induced to recall this observation when he comes to know the advantages which the iron thread sutures, the hollow needle, and the splint of wire present in facilitating the performance of the operation, and in insuring for it a successful result.”

Some three lectures are devoted to the consideration of *Cancer of the Uterus*: Its pathology and semeiology—anatomical seat and course—pathological forms—symptoms—diagnosis—ages of patients affected—prognosis.

Cancer seems to affect *females* more than *males*. This fact has been brought to light in England by the Registration Act which was in operation for a period of five years, from 1838 to 1842. The total number of fatal cases for the above years was 11,662. Of this number 8,746 were of the female sex, and 2,916 were of the male sex. According to these figures, therefore, cancer is nearly three times more fatal among women than among men. This difference is supposed to be due to the circumstance that the disease has a great fondness for becoming localized on the uterus and mamma. About one-third of all cases of cancer in females are instances of cancer of the uterus.

When *Cancer* attacks the uterus it usually does so in the region of the os and cervix. Cases of this character are more easily diagnosed than when the disease affects the *body* and *fundus*. In cases where the cervix is healthy, the disease being seated in the fundus and body, the nature of the case is very apt to be overlooked. The proportion of cases in which the cervix is the seat of the disease is 14:to 1.

Much has been said in regard to the form of cancer to which the uterus is most liable. Virchow, a very high authority, holds that the type is *epithelial* or *cancroid* in character.

A few years since it was supposed that the cells in the *epithelial* variety of cancer were of a peculiar form, caudate, and that this circumstance aided very much in diagnosis. But as to the cells themselves it is now known there is no one form peculiar to cancer, the presence of cells found in the stroma being only indicative of malignancy in so far as they are altogether heterologous to the part.

The author before us regards the so-called “cauliflower excretion” and the so-called “corroding ulcer” as of the epithelial variety of cancer. It may be remarked that pathologists think less of the lesions in cancer than of the animus.

Cancer is an “*opprobrium*,” a disease, to say the least, over which medicine has but little control. Patients usually die, in from two to two and a half years after the disease has been recognized. Some one has said that patients live an average of thir-

teen months. It should not be forgotten, however, that cases often occur that run their course very rapidly, a few months being all the time necessary to a fatal issue. And on the other hand, that patients live five, six, or eight years, during all of which time the disease steadily progresses.

The *palliative* treatment of cancer of the uterus is about all that can be done. The work before us is very full in this department. It is full of suggestions calculated to make the patient more comfortable and smooth the way to the grave.

The author has eight lectures on *Ovarian Dropsy*. After discussing at great length the *pathology, aetiology, differential diagnosis, prognosis, etc.*, he enters upon the treatment. The palliative treatment is very elaborate, and as we see nothing new on this subject we will pass it over to say a few words on *Ovariotomy* as the measure most entitled to confidence and at the present time exciting most attention.

The *History of the Operation* is premised with an enumeration of some strange measures in regard to the ovaries. After referring to the operation as being common under the name of "*spaying*" with reference to inferior animals, cases are given of its application to the human female for the purpose of making female eunuchs. This is said to have been practiced by Adramyttes, the King of the Lydians. Børhaave relates the case of a swine-spayer who castrated his daughter for the purpose of curing her of licentious practices. But as regards the removal of the ovaries for the cure of "*Ovarian Dropsy*," the operation was first practiced, the author candidly admits, by an American physician, Dr. Ephraim McDowell, of Kentucky. The propriety of the operation had been defended by Plater, Vanderhaar, Delaporte, Morand and others, yet no procedure entitled to the consideration of an operation was attempted until by Dr. McDowell, in the year 1809. In 1823, Lizars, of Edinburgh, operated in four cases.

The objections to ovariotomy are very well considered. That it is a dangerous operation no one will question. But this does not constitute a reason why it should not be performed, for there is scarcely any operation, however trifling, that is free from danger. The mortality, however, after *Ovariotomy* and after other capital operations is set forth in a table which, of course, must determine the question of propriety. By this table, which embraces 608 cases as catalogued by Fock, Atlee, Simon and Clay, the mortality is

really not as great as in *ligature of the subclavian arteries*, as in *herniotomy* or as *amputation of thigh*. When all the cases are tabulated in which the operation of ovariotomy has been performed the mortality is about forty per cent., or in other words *two patients die out of every five operated upon*.

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*The Institutes of Medicine.* By MARTIN PAINE, A.M., M.D., LL.D., Professor of the Institutes of Medicine and *Materia Medica* in the University of New York, etc., etc. Seventh edition. New York: Harper & Brothers Publishers. 1862 : pp. 1130.

We know of no one who is better qualified to look through the literature of Medicine, and furnish the profession of the day with the opinions of the ancient authors than Prof. Paine. The work before us, styled the "Institutes of Medicine," is a perfect museum in its line. It gives pretty much all the questions upon which diversity of opinions has obtained.

Among these we notice, as receiving a large share of the author's attention "The Modus operandi of Medicines," "Humoralism," "Solidism," "Physiological Chemistry," "Vital Chemistry," "The vis medicatrix Naturæ," etc. In regard to all such topics the author shows an uncommon amount of learning. To any one really who is interested in them this work will prove very valuable. And the inquiry might be made, who is not interested in them? It is true, there is not much in them that seems to be of practical importance. Let no one, however, suppose that such topics are useless. They serve for the exercise of the intellect. There is a period really when the mind likes speculation and metaphysics, and will concern itself with nothing else. After it gets through with these it then wants facts. No one knows now any more in regard to the "*modus operandi of medicines*" than was known in the days of Hippocrates. Still the attempt to get at the secret has sharpened the wits of many, and made them more than they otherwise would have been. "Are physiological processes carried on, on chemical principles?" is a question too that has been debated since any thing has been known of chemistry. No one knows any thing certainly in regard to it. Chemists who have their minds continually on the science are apt to have some nice physiological dreams ; and gifted as was Leibig, they make some

things pretty plausible for a while. Who has forgotten the sensation produced in Europe and America by the sage of Giessen, and who now has any confidence in his speculations? Prof. Paine is a Vitalist, and a very rigid one too. He shows great familiarity with the speculations of the chemists of former times, and he thinks they are just as philosophical as those proposed by the chemists of the present day. In justice to Leibig it should be stated that, although he insisted with much earnestness on his chemical theories of certain processes, he nevertheless qualifies by saying that they take place under the influence of the vital force.

The truth in regard to this subject is this: Of the sixty-five chemical elements some fifteen are found in the human organism, not united to each other in violation of chemical laws, certainly not—not held together in the tissues either by the forces of chemical affinities, for we see that as soon as the vital force ceases to operate, new compounds of a purely chemical character commence forming.

Besides discussing controverted subjects, such as those to which we have alluded, the author brings forward in good shape much on the nature of diseases and the power of drugs, that will be seen to be very practical. Indeed, few, who have written on the Institutes of Medicine, show so much thought and learning.

In regard to the use of the microscope in medical inquiries the author entertains opinions that might almost be said to be peculiar. He has no confidence in the instrument. His remarks in regard to its revelations are more the result of prejudice, seemingly, than of experience. It is really strange that so ripe a scholar as Prof. P., should be so vulnerable on the microscope—"Aliquando bonus dormitat Homerus."

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*Variola—Its Nature and Treatment.* A Paper read before the Philadelphia County Medical Society. By ANDREW NEBINGER, M.D. Philadelphia: Collins, Printer. 1862.

Any thing upon the subject of small-pox just now is apt to be read, and the more likely should something new on pathology or treatment be proposed. The paper before us is characterized principally by an effort to show that small-pox is a disease of debility, and requiring the tonic or stimulant plan of treatment. The author's views on the pathology of small-pox are made up very much

like the boys make the large snow-ball, beginning with a small one and rolling it along regardless of what sticks to it, so the proper magnitude is attained. "*The only view*" says the author, "*that appears rational is that it is a vast superficial phlegmon.*" All that we have for this sweeping generalization is simply the pustules of small-pox. These, however, are but the effect of a poison introduced into the blood—a demonstration of the poison on the surface of the body. As a consequence it is only partially true that the danger of the disease is in proportion to the extent of the eruption. Other things figure in the prognosis. We noticed a case, a few days ago, that died before the eruption on the surface was more than half matured. The pustules had just commenced rising above the level of the surface. The cause of death in this case was not the presence of an "*enormous phlegmon*" on the surface, but something pertaining to the system of the patient, or the character of the *materies morbi*.

The treatment proposed, viz : stimulants in all cases is we think unreasonable. In view of such a doctrine we might, with great propriety, inquire, what are we coming to ? Are we traveling in a circle ? Is our destination the humbug again of Brown ?—Stimulants for every thing. This rickety doctrine of Forbes, Tod, Biglow, *et id omne genus* is beginning to produce a race of practitioners that will not be worth any thing to community. Better just have old mother Nature do what she can and let the rest go, than to be bothered with practitioners of medicine who are inefficient.

Those who are so much opposed to the use of "evacuents" in the treatment of diseases, and especially to the class that operate vigorously, ought to recollect that Nature cures by this method very frequently. How often do we see troubles of the head relieved by epist xis ? Think of the efforts made by Nature through the bowels, skin and kidneys to relieve the system of noxious agents. All this means something. Nature herself cures by depletion, by the evacuant plan. Why should we refuse to do likewise ?

All who have any experience in small-pox know that scarcely two cases can be treated alike. Cases differ from each other widely in degrees of violence. Then, again, one patient may be thin with the *discrete* form and but few pustules, and another one may be corpulent of full habit with the *confluent* form and covered from head to foot. Should such cases be treated alike ?

In the treatment of small-pox it should be borne in mind that a poison has been introduced into the organism, and that the poison excites a series of movements, the effect of which is to turn the body into a factory for the making of small-pox virus. While these movements are going on all experience proves the futility of attempts to stop them. They will continue until they have accomplished their work when they will cease spontaneously. Such being the case drugs that look to the "*cure*" of a case of small-pox are improper. The physician's efforts should be confined to the work of guarding vital parts while the disease runs its course. And in doing this he will be guided, not by any nonsensical hypothesis, that the disease is necessarily sthenic or asthenic, but by the symptoms, and what appears to be the *animus* of the epidemic.

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## *Editorial and Miscellaneous.*

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### *Commencement of Starling Medical College.*

The Commencement exercises of this Institution took place on the evening of the 23d ult., in the lecture-room of the College. The Annual Address was delivered by the Rev. W. C. Roberts, of the First Presbyterian Church of this City. The Valedictory was by Prof. J. Dawson.

The Degree of Doctor in Medicine was conferred on the following gentlemen : W. Anderson, White College, Muskingum county, Ohio ; R. P. Jennings, Delaware, Ohio ; R. J. Hill, Mount Vernon, Ohio ; John Morgan, Radnor, Delaware county, Ohio ; John Reddish, Springfield, Ohio ; L. A. Grimes, West Union, Ohio ; Wm. McMillan, Corsica, Morrow county, Ohio ; E. B. Heistand, Ada, Hardin county, Ohio ; A. Condee, ——, —— ; H. H. Russell, ——, —— ; Jos. Osborn, Delphos, Van Wert county, Ohio ; W. P. Wilson, Vanlue, Hancock county, Ohio ; B. F. Davis, Bloomfield, Morrow county, Ohio ; N. B. Lafferty, West Union, Ohio ; P. C. Cole, Edwardsville, Warren county, Ohio ; W. W. Fountain, Columbus, Ohio ; Davis Halderman, Columbus, Ohio ;

W. H. Campbell, Bellefontaine, Ohio; F. F. White, Kilbourn, Delaware county, Ohio; M. Doty, Olive Green, Delaware county, Ohio; B. D. Granger, Russell's Station, Highland county, Ohio; M. L. Mills, Ashly, Delaware county, Ohio; C. J. Neff, Lima, Allen county, Ohio; H. E. Warner, Weymouth, Medina county, Ohio; H. H. Darst, Hyattsville, Miami county, Ohio; W. N. Scott, Paris, Bourbon county, Kentucky; A. J. Irwin, Richwood, Union county, Ohio; Amos Rist, Logan county, Kentucky; W. B. McGarvan, Connotton, Harrison county, Ohio, J. N. Hamilton, Unionville Centre, Ohio; J. H. Krause, Clear Creek, Fairfield county, Ohio; M. S. Starr, Shenandoah, Richland county, Ohio; J. W. Bugh, Pataskala, Licking county, Ohio, Thos. J. Pearce, Mechanicsburg, Ohio; A. B. Pearce, Mutual, Ohio; H. C. Pearce, Mutual, Ohio.

The Honorary Degree was conferred on Dr. —— Mohlman, a resident of our city.

The class of the past session of this Institution, was larger than for several years preceding. The proportion of Graduates also greater.

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*Army Surgeons.*—The Board of Medical Examiners have just closed a session in our city for the examination of candidates for the post of Surgeons in the Army, and the following are the names of those who have passed a successful examination :

Surgeon—H. K. Spooner, now Assistant Surgeon of the 55th Ohio.

Assistant Surgeons—S. S. Burrow, Alfred Buckingham, Camp Dennison; J. P. Burg, D. J. Boynton, E. J. W. Bugh, Pataskala; William H. Dretcher, West Liberty, Logan county; John W. Drescall, Sidney; Benj. F. Davis, Mt. Liberty; R. J. Hill, Mt. Vernon; Jacob Hubar, Degraff, Logan county; Davis Halderman and E. Hyatt, Columbus; A. J. Irwin, Rush Rood, Union county; R. P. Jennings, Delaware; A. F. Joseph, Cumminsville; Jacob H. K. Noeff, Piona; B. F. Ludlowe, Morrow; D. A. Moore, Elborth; W. D. McGavrian, Connotton; Wm. McMillan, John Morgan, Radnor, Delaware county; A. J. Miles, E. K. Nash both of Summit county; J. C. Preston, Brunswick, Medina county; William Richison, Wooster; H. M. Shaffer, Delaware; Samuel T. Stower,

New Concord; Thos. C. Smith, Aurora, Ind.; R. W. Varney, Cleveland; W. Eber Thompson, Isham B. Weed, Dowington, Meigs county; W. G. Bryan, Covington, Ohio.

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*A Preliminary report of the Eighth Census*, by Jas. C. G. Kennedy, Washington, was made in the month of May last, and has been on our table for a few weeks. The general desire expressed for information relating to the Eight Census has induced the Superintendent to lay before the country a preliminary report, wanting some in detail, but accurate as far as it goes and entitled to confidence.

It is a subject of congratulation that the present unhappy state of the country has not interfered essentially with the obtaining of returns from every section of the country. As a consequence of this, the condition of our country can be represented for the year 1860, a circumstance that may have some value connected with the future.

The scope of this report is very great—greater than any preceding one. Besides embracing accounts of the population relative to *mortality, longevity* and the various industrial pursuits, considerable space is taken up in a general review of the Institutions of this and other countries for the Insane, Idiotic, Deaf and Dumb and Blind. From this it appears the first institution exclusively devoted to the treatment of the Insane on this Continent, was established at Williamsburg, Virginia. An act providing for the lunatics and idiots of the Colony, passed her Legislature Nov. 10th, 1769. A Hospital was erected at the expense of £1,070. In the course of the war of Independence the building was occupied as a barracks for the Colonial forces. Subsequently it was re-opened, and has since been conducted in accordance with its original design.

The whole number of deaths in the United States, for the year 1860, stands thus, 392,821 according to the tables. But this is not the true number. By a calculation that admits of no doubt 680,000 annually die out of our population.

The annual deaths in the United States have been during the year 1860, one in 45 or 46 of the population.

A table is found in this report on *the relative mortality* of the

Natural Great Divisions of our country. We subjoin the following:

On the low-lands of the *Atlantic Coast*, comprising a general breadth of two counties, from Delaware to Florida inclusive, the percentage of deaths to the population is stated to be 1.34.

The *Lower Mississippi Valley*, comprising *Louisiana* and a breadth of two counties along each bank of the river northward to Cape Girardeau, the percentage is 1.81.

The *Alleghany Region*, from Pennsylvania to North Alabama, 1.08.

The intermediate region surrounding the Alleghanies, and extending to the low-lands of the Atlantic and the Mississippi Valley, 1.32.

Pacific Coast, 0.95.

North Eastern States, 1.24.

North Western States, Iowa, Wisconsin and Minnesota, 0.98.

For the whole United States, 1.27.

These figures are very far from supporting the common opinion that the lower Mississippi valley is so very unhealthy compared with other regions. The percentage of deaths to population in that region differs but little from that of the Great Mississippi Valley. In the former locality, death annually requires out of every 100 of the population, one and seven-eighths ; in the latter, out of every 100 of the population, one and about one-third.

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*Health of the Troops.*—The health of the soldiers in the camps in our immediate vicinity is pretty good. Small-pox made its appearance last fall at Camp Thomas and also at Camp Chase. It prevailed but to a limited extent, owing to the precaution taken of vaccination, and the isolation of cases as fast as they occurred. But, notwithstanding all the pains, the disease has not been eradicated. Every few days new cases occur. The number, however, is limited.

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*Diseases and Causes of Death.*—The conclusion has been reached that the actual deaths in the United States occur at the rate of about one in forty-six of the whole population. As a consequence

it is pretty correct to say that in 1860, the deaths amounted to 680,000. Supposing then the number constantly sick to double the number of deaths, which is a very near approximation to the truth, we obtain 1,300,000, for the number on the sick list during the year 1860. This number constitutes about one twenty-third part of the population; or in other words, one in every twenty-three of the whole population of the United States are constantly on the sick list.

The causes of death are not, of course, estimated with perfect accuracy. According, however, to calculations that are entitled on the score of accuracy to some consideration, there died in the United States, in 1860, of *Zymotic* diseases, (the different varieties of fever, small-pox, scarlatina, measles, dysentery, etc.,) 200,000; of various other diseases 350,000; of violence 30,000; of unknown causes 20,000.

The number of deaths by consumption is the greatest. Next to this is the family of fevers.

Delirium tremens has increased within the last ten years at the rate of 58 per cent.

Under the head of "*Violent Deaths*," 17,068 are reported, 5,669 were females, and 12,399 males. In the sub divisions under this head, of suicides committed, it appears that 794 were males and 208 females, or nearly as 4 to 1. Among these desertions from life "hanging" is the principal resort. By justifiable and unjustifiable homicide, 458 deaths are reported; by murder 526, and by "executions," 61. The deaths by "suffocation" are about equally distributed between the two sexes. The deaths by burns and scalds are in favor of females, a result naturally following the difference in avocation and dress. On the whole, the "accidental" deaths are on the side of males, the proportion being two of males, to one of females.

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A WRITER in the Washington *Daily Morning Chronicle* urges the reorganization at the present time of the Medical Department of the Army. After setting forth the immense labors of this department, the great responsibilities resting upon the surgical staff, and the importance of holding out inducements to men of the highest professional attainments to enter the public service, the writer makes some excellent suggestions for alterations in the present system, as follows:

" It has been estimated above that there are two thousand surgeons in the service, and at least one hundred thousand patients receiving their care. To the number of surgeons must be added that of nurses, ambulance corps, teamsters, cooks &c., to arrive at the entire numerical force at the disposition and under the government department. This force has been estimated as high as twenty thousand; but for the present purpose, and to avoid exaggeration, let it be called sixteen thousand—a force equal numerically to a large division of the army, or to four brigades! The command of such a division embraces one major general, four brigadier generals, sixteen colonels, and sixteen lieutenant colonels. Is there not here found analogy by which to be guided in the reorganization of the medical corps?

" Giving to the Medical Department one major general, four brigadier generals, sixteen colonels, and sixteen lieutenant colonels, their disposition and authority might be determined according to the following plan:—

" 1. The office of major-general to be conferred on the surgeon-general, who, as the head of the department, would exercise all the powers that officer now possesses.

" 2. Of the four brigadier generals, one, the senior, should act as assistant surgeon-general, and the others be placed at the head of large armies, or have immediate superintendence over Washington or other city or locality, embracing many hospitals.

" 3. Corps d'armee, small armies, and hospitals of lesser extent than designated above, to be controlled by colonels.

" 4. The duties of lieutenant colonels might be found in divisions of corps d'armee and in the government of hospitals in extent corresponding to their rank.

" 5. The abolishment of the offices of medical inspector-general and medical inspector, as the superior officers it is here proposed to create would exercise the functions of inspectors.

" 6. The office of brigade surgeon, or, as it is now termed, surgeon of volunteers, which has the rank of major, to be continued. The number of this class of officers to be determined by the wants of the service. They could be assigned to brigades and hospitals, as at present. There might be two classes under this rank, as in the French service.

" 7. Surgeons holding the rank of captains, first and second

lieutenants, to be also appointed, and to have duties to perform suited to their qualification and experience.

"8. The office of medical cadet to be continued in such manner as will ensure the services of young men of good character and attainments, and who are desirous of qualifying themselves for the place of surgeon.

"The reorganization of this important department of the military forces of the United States, according to some plan similar to that here suggested, would be attended with results the most beneficial to the country. Individual merit would be encouraged and the means of honoring it by promotion secured by it, and the grades of position and authority being symbolized by rank, would insure that 'order, vigilance and discipline' so necessary to the effectiveness of military operations."

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[From the American Medical Times.]

*Letters from Professor Charles A. Lee.*

THE GOAT'S WHEY TREATMENT.

BADEN-BADEN, Sept. 19, 1862.

In traveling in Switzerland one meets with all kinds of tourists —muscular Englishmen, bent on climbing the highest and most difficult Alps, to boast when they get home of what they have accomplished; French and Germans, who are not so ambitious of fame in this line, but who are very willing to enjoy fine views, if not at too great expense and labor; Poles, Russians, Swedes, Americans, men of many countries and both continents, all in pursuit of the sublime and beautiful, and ready to encounter anything reasonable in the way of danger and hardship if they can only see what the whole world has pronounced the finest and most magnificent scenery in Europe; lastly, there is a class of *invalids*—people not really sick or well, but who have been told by their physicians, who doubtless wished to be relieved from hearing their complaints for a season, that they must try the healthy mountain air of Switzerland, and in the mean time, perhaps, see what the *whey* or *grape cure* (*cure de petit lait, cure de raisin*) will do for hem. These come in admirably in place of homœopathic globules

to amuse the imagination and inspire hope, while nature, aided by travel, new scenes, new objects, and change of air, perfects the cure. Perhaps, however, I do these simple modes of treatment injustice; it does not necessarily follow, I admit, because they are now fashionable and in great repute among the English nobility and the wealthier classes, that they are a humbug—this doubtless furnishes strong presumptive evidence, but we must not judge rashly; *goat's whey* is older than Hahnemann and grapes date back at least as far as the age of Noah. Besides, old Pliny recommends goat's milk as most medicinal and agreeable to the stomach, because, he says, this animal feeds more on leaves and herbs than grass. He goes on, moreover, if I rightly recollect, to recommend all patients laboring under pulmonary affections to confine themselves to a strictly milk diet, though he thinks that the milk of the *sow* is on the whole the best for such cases. We know, moreover, that the ancients not only used milk as a dietetic, hygienic agent, but also as a lotion, and for baths. Does not Pliny tell us that ape's milk will remove wrinkles from the face, and make the skin whiter and more delicate; and that certain ladies sponge themselves with it seven hundred times a day, being very particular to observe the exact number. We read, also, that those renowned coquettes, Cleopatra, Phryne, and Aspasia, kept themselves from growing old by baths in milk, simple or medicated. In short, did not the famous Poppea keep five hundred she-apes, which she fed on aromatic herbs, and took along with her in her travels, that she might bathe and wash in the same health-preserving, time-defying fluid?

But though, in modern days, milk-baths have fallen into desuetude, yet milk, deprived of its caseine, has taken its place, and in Switzerland, especially, has taken rank as an important medicinal agent. There are many celebrated goat-whey establishments in the country, which, like mineral springs, are under the control of medical men, who make it a specialty, and prescribe it as one of the most important modes of cure hitherto discovered!

It is now about sixty years since the *goat-whey treatment* came into vogue in Switzerland, in consequence, it is said, of the recovery of some high personage under its use, and after having been given over by the profession. This was at Gais, one of the highest of the Appenzell Alps. Gais is the most celebrated place for this mode of practice at the present time, although I found establishments at Interlaken and several other places. There are but three other villages in all Switzerland more elevated, it being over

3000 feet above the level of the sea. There are quite a number of hotels and boarding-houses for the accommodation of patients, and many lodge in private houses. Much credit is given to the vivifying effect of the air, which is dry, very much rarefied, and remarkably pure. The inhabitants have such a dread of vitiated air that they do not till the soil, but leave it in pasturage, for fear that some injurious emanations may escape from disturbing it. There are several other establishments within the radius of a few miles, all celebrated for this mode of treatment, viz: Gonthen, Urnasch, Heiden, Heinrichsbad and Weissbad. Those who require a less rarefied air generally resort to the latter, which is situated in a narrow, deep valley, surrounded on every side by high mountains. There is also an establishment at Horn, near Rorschach, quite celebrated, which is supplied with warm, fresh whey every morning from the Appenzell Alps. From this place the tourist enjoys a magnificent view of the Lake of Constance. During the day the goats climb to the very summit of the mountains, browsing upon the plants which grow up to the foot of the glaciers, and also upon the resinous leaves and twigs which fall from the fir trees. At six o'clock they are driven to the village to be milked, when the milk is at once subjected to the process of separating the caseine. This is generally done as follows:—The milk is turned into a large copper cauldron, suspended over the hearth on a movable crane. When the temperature reaches about 80° Fah: it is removed from the fire, and a little rennet added, agitating it constantly. As soon as coagulation takes place the caseine is separated by the hand, or a branch of fir, in order to reduce it to a pulpy mass, when the fluid is again placed over the fire. This process is several times repeated, until all the caseine is precipitated to the bottom of the vessel, which requires about two hours. It is then elevated on a sieve, and being placed in moulds is subjected to pressure, till all the serum is separated, when it is afterwards subjected to other manipulations. The porters immediately fill their casks with the whey, and, swinging them over their shoulders, carry it, while yet warm, to the different establishments where it is wanted.

Goat's whey, thus prepared, has a greenish tint, and is somewhat opaque or milky from the small particles of caseum which have not been entirely separated by the process. It has a sweetish, balsamic taste, and an agreeable flavor. In fact, its sensible properties are very different from the goat's whey which is offered

for sale in London and Paris, and there can be no doubt that its therapeutical effects also differ in a considerable degree. Its chemical composition may be said to consist of a solution of sugar, lactic acid, and an animal extractive matter, made up of osmazone and different salts. The predominant element would seem to be sugar. The relative proportion of casein and sugar differs considerably, as is well known, in the milk of different species of animals. The salts consist of the chlorides of potassium and sodium, sulphate of soda, and the phosphate of carbonate of lime. Ass's milk contains a less proportion of salts than any other, while, on the contrary, goat's milk has a larger quantity of sugar. The whey is generally drunk warm, between six and eight o'clock in the morning. It is taken pure, and to the extent of seven or eight ordinary sized tumblerfuls. The patients are directed to walk about for several minutes between each cup. This is believed to aid in its digestion and assimilation, and more speedily bring on the other desired results. Between the third and fourth cup a serous diarrhoea is said to come on, accompanied with borborygmi, without colic or tenesmus, and an hour after the last dose it is usually terminated. The patient then swallows some farinaceous soup, to counteract any further laxative effect. It is very rare that there are any more alvine discharges for the next twenty-four hours. After a few days the tongue becomes white and the mouth clammy, and there is more or less constipation, for which a mixture of equal parts of sugar, rhubarb, and cream of tartar is given, which acts as a gentle laxative. Some of the patients also take baths of goat's and cow's milk, which are said to have a very beneficial effect in cases where the skin is hot and dry, the pulse frequent, and the nervous system irritable. Physicians who follow this specialty speak very enthusiastically of the great cures effected by the treatment, and explain the effects from the influence exerted over the secretions and excretions, and the corresponding modifications of the humors or animal fluids. In scrofulous affections, of children especially, the effects are said to be wonderful. They tell us that there exists the same difference in the blood of scrofulous and healthy persons, as there is in *colostrum* or newly secreted milk and that when fully matured, and that goat's whey restores to the blood the globules or constituents which it lacks. This seems to be very probable, at least, as we know that the strength or feeble-

ness of the body either depends very much on the composition of the blood, or bears a certain relation to the elements entering into it. There are two classes of disease for which this treatment is specially recommended, viz., those of the chest and bowels. I think that by far the largest proportion of cases that resort to these establishments are those of bronchitis, chronic laryngitis, bronchial catarrh, and tubercular affections. In a large majority the symptoms are said to be very speedily modified; as the cough, expectoration, dyspnœa, and night-sweats, which are either diminished or totally cease unless there is extensive organic pulmonic disease. But there will be always this difficulty in forming a just appreciation of the value of this treatment in these Alpine establishments, viz., to discriminate between the special and direct action of the goat's whey and the atmospheric and climatic influences. Both, doubtless, have their effect; and when we consider that both incipient goitre and cretinism, if not scrofula, may be arrested, and even cured, by removing the patient from the low valleys to high elevations among the Alps, we shall hardly be willing to admit that the goat's whey plays the most important rôle in these cases. In habitual torpor and constipation of the bowels there can be little doubt but that this special treatment effects good results. The immediate contact of this bland, mildly stimulating fluid upon the mucous membrane of the intestinal canal produces a constant depurating effect, which tends to disgorge the viscera, and favorably modify their activity. It is the uniform testimony of the patients, moreover, that one constant effect of the treatment is to increase the appetite and favor nutrition. The duration of this special treatment averages probably three or four weeks, though in many cases it is much longer. It is not uncommon at the mineral springs to associate the use of the goat's whey with that of the waters, especially here in Germany. The custom is, for several days, to mix equal parts of whey and mineral water together, and afterwards one-third or one-fourth, till, at last, the whey is taken pure, and is continued for a longer or shorter time according to circumstances. The commencement of summer is considered the most favorable time to begin this treatment. The milk is most abundant in the spring, but then it is less sapid, as the sun has not yet sufficiently developed in plants the juices and peculiar proximate principles which impart to milk its therapeutic properties. Much importance is very justly attached to the locality where this treat-

ment is to be tried. All must admit that the quality of the whey must depend, of course, on that of the milk; and milk cannot be healthy and pure where the nourishment and mode of life are not conformable to the nature of the animal. Thus, cows and goats which are confined in close stables and in large cities, necessarily deprived of pure air and fed on unnatural food, die, for the most part, of tubercular disease. We can certainly draw no safe conclusions from the use of whey obtained from the unhealthy milk of such animals, for it has no analogy with that derived from those which range and browse on the mountains of Switzerland. The establishment at Appenzell is generally preferred to the others above named, for the reasons already stated, although good results are observed at Righi, Interlaken, Kreutz, Weissenstein, etc., etc. The goat's whey establishments of Germany, not being so favorably situated, do not enjoy so high a reputation as those of Switzerland. The most important are those of Baden-Baden, Badenweiler, Rehburgh, Rosenau, Schlangenbad, Gleisweiler, Ischl, Neuhaus, Gleichenberg, Minden, Botzen, and Meron in the Tyrol. The last is especially celebrated.

I have gone more fully into this subject than I had intended when I begun, and I have thus no space left to speak of the *grape cure*, which now competes with the *whey cure* in public esteem and patronage. It is certainly a matter of rejoicing to every rational and philanthropic mind that these two modes of treatment, simple as they are, have so completely displaced *homœopathy* on the Continent that one rarely hears the word even mentioned. The name even is now synonymous with *quackery* over all France, Switzerland, and Germany, at least, as it should be every where. Did I think that goat whey and grape cure establishments would eradicate this baneful pest from our own land, I should be tempted to spend the rest of my days in proclaiming their superiority.

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BADEN-BADEN, Sept. 20th, 1862.

A few words on the grape-cure (*cure de raisin*) may serve as an introduction to some notice of these waters of Baden-Baden. This grape-eating, as a remedy for pulmonary affections especially, has now become one of the established modes of treatment on the Continent, especially on the Rhine, and certain parts of Switzerland. Of course, so pleasant a remedy could not but be popular, and hence it triumphs over the sugar pellets. Dr. Curchod, of Vevay,

on the banks of the Lake of Geneva, is quite celebrated for this line of practice, and has published an excellent monograph on the subject. This fruit of the vine, however, is not without its competitors, for we now hear on every side of cures by strawberries, figs and peaches (*cures de fraises, de figues, de peches*), and other fruits. In the Tyrol, and north of Italy, they are trying the opposite extreme, and are loud in their praises of the cure by raw ham (*cures de jamboucru*). I would not, however, depreciate the grape cure by comparing it with the latter, which I only mention to show what medical vagaries may occasionally become prominent; and I am even quite ready to admit that there is satisfactory evidence in favor of the great benefits resulting from the free use of ripe grapes in certain cases. Some physicians rely on it altogether, while others begin the treatment by it, and then follow with the use of the appropriate mineral waters. It is generally agreed that the free use of sweet, ripe grapes not only aids nutrition, but abates the general excitability, modifies the blood, resolves pulmonary and other engorgements, and improves the secretions. In pulmonic cases of a sub-acute character, its effects are quite striking. The testimony is uniform on this point, and I have myself seen cases, where, in incipient phthisis, this treatment has served to abate the frequency of the pulse, the heat and dryness of the skin, the hectic flush on the cheek, and the frequent hæmoptycal attacks, and these are the very symptoms which contra-indicate the use of these mineral waters.

The treatment by grapes consists essentially in taking one pound of fresh ripe grapes early in the morning, not swallowing the skins or seed, and two hours after a still larger quantity. The patient dines at twelve o'clock on beef or mutton, boiled or broiled, stale bread well baked, and a glass of old Rhine wine, but no vegetables, except occasionally potatoes or carrots. About four o'clock, a certain quantity of grapes are to be taken; at evening, tea with white bread. The patient is directed to take as much exercise as possible between meals, and abstain from drink, unless he should feel quite thirsty. The whole quantity of grapes to be taken in the course of twenty-four hours is from two to three pounds. Some who cannot well bear grapes so early in the morning, are advised to take a cup of coffee or chocolate first, and not begin the day with grapes until the stomach has become somewhat accustomed to them. It is believed that the best grapes for medicinal use are

not those which make the richest and strongest wines; nor are those recommended which are sweet and aromatic to the taste, with small and hard berry, and thick skin, like the *Riessling* grape, but those of larger size, and thin pellicle, and which yield on pressure a more abundant and watery juice—such as those call the *Kleinberger*, and which are found on the Rhine, in the Palatinate, and the principal vineyards of the Bergstrasse.

The duration of the grape treatment is from four to six weeks, generally, though it varies, of course, in different cases. The best time to commence it is about the middle of September, when the grapes are supposed to be fully ripe. It is not my purpose to enter here upon any theoretical discussion of the therapeia of the grape cure. Every one knows that this fruit abounds in sugar, gum and vegetable mucilage, and other nutritive elements, and it is easy to understand how it may prove beneficial in many pulmonary affections, especially tuberculosis, by strengthening the vital forces, and contributing to the general nutrition of the body. It is often stated that the grape acts as a laxative, or even purgative, but this is a great error; it would be nearer the truth to say, that it more frequently acts as an astringent. Even the sweet Chasselas is not laxative. The experiments of Wohler and Millon have proved that the organic acids contained in the grape are oxidated and destroyed in the economy, leaving behind only alkaline carbonates. This is, doubtless, the reason why the urine, during the first days of this treatment, becomes alkaline, and why certain affections of the bladder and urinary organs are so speedily ameliorated.

I may, perhaps, have more to say on this subject hereafter, as I learn and see more of it. I leave it now, with an impression that it might, perhaps, be introduced with advantage into our own country, in the same affections in which it has proved advantageous on this side of the Atlantic.

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*Experiences in Military Surgery.* By DAVID P. SMITH, Surgeon Vols., Surgeon in charge of Fairfax Seminary Hospital.

#### EXSECTION OF KNEE-JOINT.—AMPUTATION AT KNEE-JOINT.

In my remarks I may have seemed to lay too much stress upon my favorite method of amputation below the knee, but one who

has seen the enormous fatality following all amputations in the army will not wonder at it. Many causes conspire to render primary amputations the exception and not the rule, and I can assure you the slumbering volcano of Pyæmia, *et id genus omne*, that wait upon every secondary operation, upon soldiers whose nervous systems have been worn down by hard marches and overstrained by the tremendous excitement of a battle-field, and whose vascular systems have had but hard bread for nourishment, must give us pause. Any amount of cut surface, tension, pent up pus, etc., etc., will be endured after a primary amputation, with a favorable result; but not so with secondary operations.

I say emphatically that the advantages which I claim my method alone furnishes must be obtained if recovery is expected to follow. The only cases of recovery in this hospital after secondary amputations have been where this method was adopted. The cases were not selected.

In Fairfax Seminary General Hospital, from August 1, 1862, to January 1, 1863, under my charge, we had nine secondary amputations of the leg, two of them following unsuccessful amputations at the ankle. Of these two recovered and seven died. All of these operations were secondary, because the enemy held possession of the battle-field—the second Bull Run—and the wounded were not removed thence until nine or ten days after the contest. This enormous mortality is frightful, but easily accounted for. They had lain a long time on the field, because the retreat of our army had prevented their receiving speedy succor. For the same reason they had received little or no sustenance for a long time after the reception of their injuries.

After amputations of the leg the next operations that claim our attention, and which must be discussed together, because practically they are closely associated, are *exsection of the knee-joint* and *amputation* of the same joint.

*Exsection of the Knee-Joint.*—I am prepared to utterly discard this operation from the list of operations proper to be performed for gunshot or other *injury*, for this reason, even in civil practice, where every advantage of rest and careful nursing can be had, it is a doubtful remedy. But it is admissible because it is, or should be, always done for *caries*, which should most certainly be considered by every surgeon as imperatively demanding thorough excision as *cancer*. Take this view— and I think I am justified in so

doing—and then let us see if a shattered knee-joint should be submitted to the same treatment. Will there not be more hope for safety if the uninjured ligaments are left undisturbed, and merely the loose fragments removed through large depending incisions? Let every fragment be removed, and take care that the incisions traverse the synovial sac to its utmost limits, and I am persuaded that we have done our best. Nature can more readily repair it in that shape, than she can unite the wound left by exsection. By exsection we also destroy all remaining ligaments of the joint, and render necessary the most perfect rest and most perfectly adapted splints.

What do we gain by exsection? Merely the removal of shattered bone, the smoothing off of rough surfaces, and the extirpation of the synovial sac. All this, or its equivalent, is easily done by free longitudinal incisions, and dexterous use of the forceps and gouge. All of the cases, five in number, operated upon in this hospital, did well for from two to six weeks after the operation, and finally sank exhausted from suppuration and with blood-poisoning from the vast pus-producing surfaces.

There are, however, rare cases which may necessitate exsection. The following is a case in point:—About a fortnight after the battle of Pittsburgh Landing, Gen. Thomas's corps, of which I was then Medical Director, in its advance came upon a large rebel hospital, and I was ordered by the General to do what was needful for the wounded, and see that they were sent to the river and placed on transports. I found four Confederate surgeons in charge of them, but they had so neglected their own men that the wounded themselves begged me to see their wounds. Several bad gunshot fractures in and about the knee-joint I amputated forthwith, as a necessary preliminary to transportation. Finally I came to one fair-haired, delicate-featured lad, of about seventeen, with wound of entrance just behind and a little above the outer condyle of the right femur. On introduction of the finger it could not reach the ball, which appeared to be imbedded in the femur between the condyles. The knee-joint was inflamed, and he complained of the slightest motion. I therefore performed circular incision of the skin an inch below the patella, and retracting and dissecting it upwards—rather hastened in it by the sudden occurrence of sharp artillery firing about six hundred yards to the front—divided the bone just as it expands to form the condyles. The ball was a con-

ical one, completely and firmly imbedded between the condyles, and just raising before it the cartilaginous envelope of the bone. This case, which, in view of long and weary transportation, called for amputation, in hospital practice would have been just the case for exsection of lower end of femur. During our advance on Corinth I saw a man who was shot with a Miniè bullet directly through the joint from front to rear, chipping off fragments from head of tibia. I removed these, leaving free incisions. During the two weeks I had him under observation he did remarkably well. There was marked improvement after the free incisions were made.

*Amputation at the Knee-Joint.*—I have had considerable experience in amputation at the knee-joint, both at Mill Springs, Shiloh or the battle of Pittsburgh Landing, and also in this hospital, Fairfax Seminary General Hospital, Va. I give most decided preference to the operation by lateral flaps, which I practiced on the cadaver long before this war broke out. I have seen it described nowhere, and so I shall venture to claim it as original:—Two oval lateral flaps are made starting from the centre of the patella, and meeting at a point exactly opposite on the under surface of the limb. These flaps should not be merely semi-circular but *oval*, the length of each flap being from one to two inches greater than the semi-circumference of the limb, and the two flaps to deviate from each other in front at a very acute angle, so that there may be enough integument to cover the swelling condyles. The flaps will embrace merely skin and cellular tissue, no muscular tissue being divided. The popliteal artery will be divided just in the posterior angle of the flaps, and behind the condyles.

I have remarked somewhat at length upon amputation at the knee-joint, and I am very desirous of urging upon the profession the importance of its adoption whenever practicable. I believe on extended trial it will be found far less fatal than any amputation of the thigh. In almost any injury of the knee joint it can be done either by circular incision a little below the patella or by one or two or three skin flaps. I should remove as little as possible of the femur, preferring to leave it intact so as not to open up its internal structure. In this operation no muscular tissue of any extent is wounded, which must and does add to its security.

I cannot give statistics of this operation, owing to my constantly changing post. Of two cases in which I performed the operation

upon Confederate wounded, after the battle of Mill Springs, the progress for a fortnight was very favorable, and that too when subsistence for all was extremely precarious. After Pittsburgh Landing three cases—where I removed the limb at the joint—went on favorable for three days that I saw them. I could not ascertain their subsequent history. Of two operations at this hospital one died within twenty-four hours, apparently from the fact that the surgeon who administered the chloroform gave a very large quantity; the other case did well and recovered with a fine stump. A man was also brought here from Bull Run who had undergone the amputation on the field; he did well, and went home with a good healthy stump.

*Shall Amputation be Performed in Gunshot Fracture of the Femur from a Conical Leaden Bullet?*—The importance of this question cannot be over-estimated. It is one we are frequently called upon to decide.

While in the field at the West, although seeing many fractures of the femur, and performing or ordering performed many amputations for said injury, I was not stationary long enough at any one place to see the result of such practice. From dissection of such injuries after they were removed by amputation I was, however, enabled very early to recognize the hopeless nature of such cases if left to themselves.

Conical balls make terrible work. In one case I removed the limb at the hip-joint on account of the complete shattering into fragments of at least one-half of the femur by a minié. Civil surgeons who had hastened from Chicago to Pittsburgh Landing, and who assisted me with the wounded on board of the Crescent City, on its way up to St. Louis, assured me that they had never dreamed of any thing like what they found.

The complete destruction of the bone can be described perhaps by saying that sometimes the whole shaft will be as completely shivered, and fragments driven into remote portions of the limb, as if a small shell had exploded in the bone. For example, in one case where I was picking out the fragments caused by a minié ball passing through the humerus at the insertion of the deltoid, I found a fragment of bone driven into the joint between the radius and external condyle.

*Amputation of Thigh.*—I take it that the great maxim to be

observed in amputation of the thigh is to perform it as low down as possible. We ought to *hug* the knee-joint.

The method of performing the operation should, in my opinion, be the same as that before recommended to be practised on the leg, taking care, when the amputation is in the lower third, to so transfix the limb that the femoral artery and sciatic nerve may be in the short posterior and internal flap. When the anterior flap cannot be made of the length of the semi-circumference of the limb, it can be made shorter and the posterior increased in length. It will then resemble the method which I have seen Mr. Syme of Edinburgh prefer to all others. Of course, above the middle of the limb the femoral artery must be in the anterior long flap, affording a fine opportunity for acupressure, which I saw repeatedly practised in Scotland with success.

I can give no statistics of the cases of fractured thigh-bone occurring at the battles of Mill Springs and Pittsburgh Landing, because they were soon sent to St. Louis and Cincinnati.

After the second Bull Run battle I received into Fairfax Seminary hospital eighteen cases of this injury. Of these, at this date, 14th February, 1863, twelve have died, and one of the six survivors is in a very critical state. If he escapes a deposit of tubercle in the lungs, it will be more than I expect. Wasting suppuration and pyæmia carried off the twelve. In four of these eighteen cases secondary amputation was performed as a *dernier ressort*, but the abscesses present in each case forced me to perform the operations so high up that a fatal result followed.

Would not the plan of Cassaignac, to amputate by the écraseur, be worth a trial in some of these secondary amputations? The great advantage would be that the suppurating surface left would be exceedingly small, and the tissues would be so matted together that absorption of pus could hardly take place.

After the battle of Pittsburgh Landing I amputated once at the hip-joint, for complete shattering of the femur to fragments. It was on the sixth day after the receipt of the gunshot, and the man lived as near as I can ascertain for from six to eight days. I made a long anterior flap, which was firmly grasped by two hands passed in behind the knife, disarticulated and cut straight down; tied the arteries in the short posterior flap first, and finished with the femoral. The operation occupied not more than ten seconds, and not more than four ounces of blood were lost. He rallied well from

the shock. No particulars of his case after I left him ever reached me.

*Removal of Sequestra*—It has been my fortune several times to execute difficult and dangerous operations for the removal of sequestra imbedded in a large mass of new bone thrown out around the seat of a gunshot fracture, and I am sure no better argument is wanted to prove that, whenever and wherever practicable (and where is it not?), free incisions should be made, and all detached or semi-detached fragments of bone removed soon after receipt of the injury. Any pointed spicula which yet remain, a portion of the main shaft, need not be removed unless they irritate the surrounding soft parts. I am convinced that it is this procedure alone, making free and depending incisions, that will suffice in a case of shattered femur.

I have now on the table before me a preparation of the lower third of the femur, where I was compelled to perform amputation of the limb one hundred and thirty-five days after gunshot fracture took place, on account of necrossed bone to a large amount being so imbedded in new bone as to render extrication impossible.

An enormous mass of callus completely envelops the dead portions, with here and there cloaca.

In a similar case of injury received at the same time, I have just made an extensive incision, and extricated all the necrossed fragments that could be got at. At best the limb is not and cannot be made equal to one of Dr. Hudson's artificial limbs.

*A new Splint in Fracture of Femur*.—In my cases of shattered limbs I use a slat of pine wood extending from the crest of the ilium to just beyond the sole of the foot. It should be about two inches wide and half an inch thick. A similar stick runs up on the inside of the limb to the perineum. Join the two by a cross-piece below the sole of the foot, and by a cross-piece passing in front of the thigh just below the perineum; suspend the limb in this by separate strips of bandage passing under the limb, then over the two sides of the cradle, and the ends tying in a bow-knot; suspend the splint from above so that the whole limb and its dressings may swing clear off the bed; change the tension of this or that muslin-strip until the limb lies easy; lead the cords that suspend the splint a little downwards so as to make any *necessary extension*; raise the foot of the bed an inch or two to furnish counter-extension if needed; and you have my idea.

In no other way can an exsected knee or gunshot fracture of the femur be so completely cared for. One will see at a glance that the limb can be most completely cleansed and dressed without stirring it in the slightest.—*American Medical Times.*

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*On the Cultivation of Egyptian Opium* By Mr. S.  
STAFFORD ALLEN.

In the course of a voyage on the Nile last winter, an opportunity was afforded of examining the process of manufacturing Egyptian opium, and though the whole affair is so simple and previously well-described as to be scarcely worth mentioning, the observation of an eye-witness may possibly interest some of your readers.

The town of Gheuch is situated on the Nile, about 400 miles above Cairo, and celebrated for the manufacture of the earthen "goollehs," a sort of porous water-bottle much in use throughout Egypt.

Near this place I observed several fields (mostly small) of white Poppies (*Papaver album*), which I was informed were grown for Opium; and being curious to see the process by which this important article is produced, I paid a visit to one of them.

The poppy itself is called by the Arabs "Abou Nome," or the "father of sleep" (the term "abou" being generally used in the Arabic language, in conjunction with any remarkable quality or feature, to indicate a person or thing.) The opium itself is distinguished by the name of "fiuw." As soon as the head has attained a good size, and before it has begun to dry, a long incision is made with a knife, running twice round it in a horizontal direction. From this incision a yellowish milky fluid exudes, in the form of small tears, becoming darker and harder by exposure to the sun.

This is collected every morning on a sort of rough scoop knife (all tools in use amongst the Arabs being of the rudest description), and the produce of several gatherings added together on a leaf, where they form a flat cake, which is then placed in the sun to harden.

Each head is scraped four or five times, after which it is exhausted, and is then cut and dried for seed.

The quantity procured from each head is almost infinitesimal, and the amount of a whole day's gathering exceedingly small.\*

The opium manufactured here is not exported, and no more is grown than is required for home consumption.

Professor Bentley stated that the opium forwarded by Mr. Allen was unlike the ordinary commercial Egyptian opium. The present was covered by a poppy leaf, whereas commercial Egyptian opium was enveloped in a leaf with radiate veins, the origin of which was unknown, but which he believed was derived from *Platanus orientalis*. The present specimen much resembled the small Constantinople opium in flat cakes of Guibourt (see Pereira's *Mat. Med.* 4th ed. vol. ii. part 2, page 600.)—*Phar. Jour. Lond.*, Nov. 1862.

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*Wound of Posterior Tibial Artery. Secondary Hæmorrhage—Ligation of Artery—Death—Case of Col. Matheson.* By W. B. LITTLE, M.D., Surgeon 32d Regiment, New York Vols.

Colonel Roderick Matheson, commanding the 1st California Regiment, or 32d Regt. N.Y.S. Vols., was wounded in the battle of Crampton Gap, Md., Sept. 14, 1862, the ball passing through the calf of the right leg, fracturing the fibula in its course.

The wound was treated with cold water dressings. Six days after the wound was received a slight hæmorrhage of dark blood occurred, and again two days after it was repeated; the whole amount lost at both bleedings did not exceed four fluid ounces. No further bleeding took place until the 17th day, when a more profuse hæmorrhage occurred, the quantity lost not exceeding one pint, not being sufficient to induce syncope. The next day, chloroform having been administered, the coagulum was removed; considerable hæmorrhage followed, coming, as was soon ascertained, from the posterior tibial artery. It was now determined to enlarge the wound and tie the artery, which operation was accordingly performed. On reaching the artery it was found not divided, but a portion of one side, to the extent of nearly an inch, was carried away; a ligature was placed both above and below the wound in the artery, a few pieces of bone removed from the fractured fibula, and the patient placed in bed. Symptoms of great

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\* A specimen of opium procured at the above-mentioned place accompanied this paper.

prostration being present every effort was made to rally him, but without avail. He lived but a few hours after the operation was completed.

The position held by Colonel Matheson, not only as a brave and accomplished military officer but likewise being a prominent citizen of California, and having extensive connections in New York, gave a painful prominence to the unfortunate result in his case, and, as usual, the course of treatment adopted by the surgeons in charge has been the subject of severe criticism, both in and out of the profession.

Among the many embarrassing positions in which the surgeon finds himself placed, there is none more so than when, as in the case of Colonel Matheson, he is required to avoid, on the one hand, a weak and inefficient course of treatment, and on the other, a too officious and meddlesome interference. Does the course pursued in the present instance partake of either of these characteristics? During the first six days cold water dressings were applied; then a slight haemorrhage of dark blood occurs, followed two days afterwards by another, of a similar character, the whole amount lost not exceeding four ounces. During the next eleven days, there was no bleeding. Now, up to this period of time, would any judicious surgeon have deemed it his duty to ligate the posterior tibial artery? Was there any evidence, even, that this artery was wounded at all? Was it not more probable that some smaller branch was involved?

The occurrence of the severe haemorrhage on the 1st of October made the necessity of surgical interference palpable, and it was accordingly rendered on the succeeding day. The operation was skillfully performed; it was commenced by Dr. Geo. Burr, surgeon U.S. Vols., and completed by Dr. Du Bois, asst. surgeon U.S.A., in the presence of surgeons Robinson, Janes, and myself. The chloroform was very carefully administered, the precaution being taken to stimulate the patient previous to its inhalation.

The medical treatment was very plain, combining tonics and opiates. The previous health of Col. M. had not been good during the campaign on the peninsula at Harrison's Landing, and after returning to Alexandria he had suffered from diarrhoea, from the effect of which he was more or less enfeebled at the time of receiving the wound.

Throughout the whole course of treatment I had the daily advice

and connsel of Surgeon Burr; and I also called in consultation surgeon Henry S. Hewit, U.S. Vols. (then stationed at Frederick City). after the second slight hæmorrhage occurred (on the eighth day).

It may not be improper for me to add that the most friendly relations existed between Colonel Matheson and myself; we were old Californians, and I naturally felt a peculiar solicitude in his case. I was almost constantly in attendance, and was present in the room when all the hæmorrhages occurred.—*Amer. Med. Times.*

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BY K. KLOTT.

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He keeps constantly on hand a great variety of instruments, which he invites physicians, surgeons and dentists to call and examine before purchasing elsewhere. He hopes, and is determined to furnish the western profession with as good a quality of instruments as can be found in our largest cities.

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J. DAWSON.

jan. '62.

# O H I O

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### Original Communications.

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*Valedictory Address to the Class of Starling Medical College.*  
By Prof. JOHN DAWSON.

GENTLEMEN: The relation sustained by you to the faculty of Starling Medical College during the past session is about to be dissolved. In the diploma just received, we, as a faculty, bear testimony of your fitness for the duties of Practitioners of medicine. In view, therefore, of the high responsibilities you are about to assume, allow me, in behalf of my colleagues, to offer you a word or two in the way of a *Valedictory*—more, however, for the purpose of keeping up an agreeable and a time-honored custom, than with any expectation that you will be benefited by what I have to say. Some of you, it is true, are yet young—young in years and also in a knowledge of medicine—and, as a consequence, are to a certain extent impressionable; there are others full of years, veterans really in service, and needing nothing in the way of advice.

On entering the profession as practitioners, new duties will devolve on you—duties that pertain to your brethren in the profession, and duties that pertain to the sick. These, I may mention, are fully set forth in the Code of Ethics of the American Medical Association, and I commend this Code to you as embracing a very good summary on professional intercourse.

Good men and great men have been concerned in framing these rules, and allow me to say that they will be found useful in directing your feet in the paths of propriety. This Code, however, falls short in providing for all of the contingencies of professional intercourse. Your own sense of what is right must at last be your guide.

The first question that usually occupies the mind of the young gentleman just about commencing business is, "How can I succeed—what course can I take that will make my medical life a success?"

This question might seem to be of easy solution; but it is not, judging from what is continually passing before our eyes. In some cases success might seem to be the result of accident. This, though, is an appearance. There is no denying the fact, however, that it is often connected with very opposite things, very opposite traits of social character. Sir Astley Cooper, for example, was very polished in his manners. His cotemporary, Abernethy, was full of Abernethyisms. John Hunter, the most remarkable man of the profession, had no taste for promiscuous society, was fluffy and often abrupt in his manners. William Hunter, the brother of John, was a very cultivated gentleman. Abercrombie presented an example of taciturnity; he disliked, it seemed, to talk the necessary amount even for practical purposes. Physick, the head of the American profession for so long, was distant in his manners; but few of his students ever made his acquaintance. Caldwell was a finished colloquist, and those who have read his "Autobiography" will recollect how he insists on the formalities of etiquette, and the compliments he pays to proficiency in this line. Drake, the American Hippocrates, was dignified, courtly, yet ready in repartee, and enjoyed the social circle very much. Chapman had an inexhaustible fund of humor, was always ready for a joke, and for nearly half a century was Philadelphia's favorite punster.

With such examples before you, it would seem difficult to fix upon any moral or social combination as necessary to the getting

of business. Men apparently with opposite traits of character, and with peculiarities not by any means prepossessing, but often the reverse, are seen to become famous and wealthy.

You will, gentlemen, be likely to have a probationary stage in getting business, and during that period you will debate earnestly the course to be pursued. You will find, too, during this period, a great many that will tender you advice. They will do this in all kindness and sincerity. Some will tell you to go into the highways and market-places, as did Socrates, where you can make the acquaintance of the people, learn their modes of thinking and their prejudices, and thus become adapted, as the saying is, to the circumstances surrounding you. Others will suggest to you to hunt up Mrs. Poyntz—every community having one or more of such characters—and secure her services in your behalf. She, it will be told you, knows about every body and every thing—all about the doctors of the place, whether of law, medicine, or divinity, and what their hobbies are. She, you will be informed too, has the power to make or unmake prospects for certain classes, especially new-comers; to modify or stimulate, as may be necessary, and to regulate things generally.

Now all this, gentlemen, looks very plausible in the way of advice. Besides this, Mrs. Poyntz is without doubt a very nice old lady—not very old either. She is distressed when she sees a case of neglected merit, and is always ready to assist in a good cause. Still, the time you would occupy, gentlemen, in hunting Mrs. Poyntz or Mrs. Any-one-else, for the purpose of creating influences in your favor, might as profitably be spent in almost any other way. Attempt success by no device or trick, for such means, to say nothing of their unworthy character, always react. Our people are fond of nonsense for a while, but at last they want the truth, and will have it. Your just claims to patronage may be neglected for a while, often for a good while; but be patient and persevere, and your day will surely come. Often you may feel discouraged and restive when looking around and seeing the knaves and charlatans being employed by those from whom better

things ought to have been expected. Keep your temper, and your logic too, I beg you, under such circumstances. You may say, "Did ever!" but nothing more with impunity. Such characters will be short-lived, unless nourished by your imprudence.

Perhaps, now, a course of conduct that would prove successful would embrace, among other things:

Sincerity of Manner;  
Unity of Purpose;  
Industry.

I have no time to dilate on these propositions. Indeed, to dilate upon them would be to dilute them. They are axiomatic.

*Sincerity* is made up of the best of things connected with the moral sense. Without it, character is empty, deformed, degraded; with it, the shabbiest of traits become respectable.

*Unity of Purpose*.—What shall I say to commend this proposition to your attention? Unity of purpose is of great importance in intellectual movements. It imparts strength. You cannot divide between different pursuits. Your profession will require all of your time. Let no one flatter himself with the delusion that he can act the part of neighborhood surveyor, village lawyer, court-house politician, or preacher.

“Or in the course of one revolving moon  
Be statesman, chemist, fiddler, and buffoon.”

Pardon me, gentlemen, if I tell you that I have seen quite a number of young men, some very gifted ones too, during my professional life, but I have never yet seen one that had any more material in him than enough for the making of a good physician. The great trouble usually has been the other way—the pattern too small. Did you ever really think of the literal effect of dividing between different pursuits? In what respect would such a course differ from an amputation at the median line?

In order to see the folly of chopping one's self up for the performance of a plurality of occupations, think for a moment on the extent of your own field of inquiry, and how inadequate one short

lifetime is to the great work before you. The Arabians, so acute in intellect, were the first to appreciate man's incapacity; and they acted upon it by dividing the profession into sections. As all know, this nation, during the brief period that it concerned itself with scientific medicine, accomplished uncommon results. Medicine and surgery were separated. Medicine was again subdivided, specialties being made of the important diseases.

As the Fates have ordered things for us at the present day, we have too much to do. The practitioner is compelled to practice Medicine and Surgery and Obstetrics; and it is expected that he will be equal to the task placed before him. Gentlemen, the man don't live that is. Either branch is enough—really too much. Sir Charles Bell expended himself upon the nervous system. So did Marshall Hall. How many, indeed, take up a single organ and study its diseases? Some take up a single disease and devote a lifetime to it. And it is by such a course that results worth thinking about have been accomplished.

Look at this subject a little from another stand-point. What is the reason that the Romans had no physicians for the first five hundred years of their existence as a nation? Was it because the Roman intellect was deficient in the qualities required? I think not; for we have had abundant evidence to the contrary. It was because the Roman mind was too much distributed. And we may again ask: Why was it that Celsus and Galen, with their crudities, held dominion over the medical mind of Europe for fourteen centuries? It was because there was no *unity of purpose* in the cultivation of medical science. If a single individual during that long night had made his appearance, possessed of singleness of purpose and ordinary gifts, the spell might have been broken.

I beseech you then, gentlemen, to avoid everything calculated to divert your attention from your profession. Unity of purpose should be your motto. You have no time for a plurality of vocations. Give yourselves up to devotions at the altar of Medicine,

and resolve—"Let others do as they will or may; as for me and my house, we will serve Apollo."

*Industry.* Why should I dwell on such a subject? I will not, further than the offering for consideration of some very general remarks. Industry is necessary in your profession, because of the vast amount of work before you, and the shortness of time there is to accomplish it. A favorite aphorism of Hippocrates reads thus: "Art is long; life is short; judgment difficult." Nothing is more true, in actual professional life, than the want of time for mastering the requisite amount of knowledge. Saying nothing about contributions which it is the duty of every one to try to make, scarcely any of us have time enough, if even well employed, to become thoroughly acquainted with what is actually necessary to make us respectable practitioners; that is, practitioners that bring to the relief of the patient the reasonable amount of skill, or the skill that the masters of our science would pronounce favorably upon. Be careful then of your time. Watch the moments as they are passing, and see to it that they are occupied so as to count to your advancement. It is true that the people may say of a young physician not inclined to be studious, that he is a nice gentleman, a good citizen, a very good-hearted Christian, a real clever soul; and they may also patronize him to some extent. But, gentlemen, it is a singular fact, that no one has ever permanently succeeded to the business and confidence of an enlightened community without the possession of substantial qualities—qualities that result from labor well directed.

In this connection I will offer you a thought or two on the method of occupying your time.

For awhile—often a good while—after you enter the profession, you will be apt to have some leisure on hand, for it is not to be expected, however fortunate you may be in a location, that all of your time will be taken up with business—with actual practice. The people, you will find, are timid, and wait upon each other to give the "new doctor" a trial. This period of waiting often lasts for years, and it may be remarked, that its length has a

very close and direct relation to the industry and worth of the young physician. How, now, should this time be occupied? Upon the proper solution of this question very much will depend. The road to destiny bifurcates just here. Should a course be adopted having no higher aim than that of merely getting along, or killing time, the future of the individual may be easily predicted. But if, on the contrary, this time should be regarded with care, should be properly employed, good results will certainly follow.

Among the many ways of putting in the time of the waiting period, that of reviewing your college course may be suggested. Many things connected with the lectures on the different departments have been no doubt but faintly impressed upon the mind. This elementary information is your capital in actual practice; it will serve you under all circumstances; it is that without which really you cannot as a practitioner safely do anything. See to it, then, that you are thoroughly acquainted with all the elementary branches—with the alphabet of practical medicine and surgery.

A portion of time may be employed in looking through your literary attainments. Are you well fixed up on the English language? It is no great accomplishment to be a good English scholar; but it is a great blemish to be a poor one. What makes a worse impression upon us than a communication from a physician written in bad English? It is looked upon as mere pedantry to notice errors that so often result from the haste of composition. But gentlemen, the idea of a medical man not being able to know whether or not his own communication is grammatical, is awful, awful. A knowledge of Greek and Latin, although not absolutely indispensable, will nevertheless give you advantages. Hippocrates, and Galen and Celsus wrote in these languages; and no one can ignore the pleasure and benefit of consulting an author in his own language. Besides the nomenclature of Medicine—indeed I may say of science in general—is derived from these languages. You cannot investigate well, that is, you cannot exactly see what others have done in the profession, without some knowledge of the

ancient languages. And after all that has been said to the contrary, it is the best to write prescriptions in the Latin language.

After becoming actively engaged in the routine of professional business, you should still not be regardless of your surplus time. Some of the most valuable books we have had, have been written amidst the emergencies of actual practice. An author of some celebrity once told me that he had written the most of one of his books while actually engaged in attendance on his cases. To say the least, you will have ample time to record the progress of cases, making note of everything of interest. You will also have time to arrange your notes for your own future use, or for the periodicals of the day.

Cultivate the acquaintance of your peers. This will enable you to compare observations—a practice that so often results in mutual improvement. There is something to be gained by becoming attached to medical societies. Intercourse stimulates effort, modifies extravagant opinions, and destroys dogmatisms. Without communication the mind fails to become either thoroughly or handsomely developed.

In view of what has been said, you are perhaps ready to inquire if it is the intention that medical men just starting out in business, should spend all their time in intellectual pursuits. Is there to be no time, you ask, for relaxation, society, etc.? All the advice, you are ready to say, seems to point to continuous, incessant work. Such questions are pertinent. We all would have studied physiology to poor purpose to have supposed any one capable of spending all his time with things requiring the constant use of the brain. No one could do so to any purpose at all. The brain, like all the organs of the body, requires rest—has its periods when it requires repose. It is true that by changing about to different things, thus allowing one faculty to rest while we call another one into exercise, we may be enabled to lengthen the time of labor, but not to any great extent.

If a professor of chemistry were to take an average specimen of

our young men, put him in a crucible and analyze him, he would find him differ but little in his composition from the following:

Fun, frolic, and fishing tendencies.....	50.0
Sleeping desires.....	25.0
Taste for philosophy and science.....	15.0
Miscellaneous matters, and matters not soluble except in good alcohol.....	10.0
	100.0

You may be surprised, from this analysis, gentlemen, that the proportion of taste for philosophy and science, should be so small. You need not be. It is large enough for great results. Think what you might accomplish in a lifetime of reasonable length, by employing fifteen per cent. of your time in intellectual pursuits.

Let us look at this matter a little, for it is important.

Bacon who was an intellectual giant, when writing the Novum Organum, only worked about four hours in the twenty-four. Pope also worked but four hours. Scott who filled the world with his books seldom ever devoted more than four and a half hours a day to their composition. This is about the time, too, that our most successful literary men devote to intellectual work.

I am aware, then, gentlemen, that you can work successfully only a portion of your time, and it is this great physiological fact that makes it so necessary for you to be careful. If this time be properly occupied, you will accomplish results that will be above your own expectations.

A reason of some force in favor of employing the brain daily, may be found in the fact that the daily exercise of this organ is necessary to good health—to perfect health, I mean. A physician who devotes four or five hours every day to intellectual pursuits, will, *cæterus paribus*, be more healthy, and capable of more physical endurance, and live longer, than one who does not. The eye, without use, shrinks and becomes diseased. This is true also of every other organ, the brain not excepted. By the employment of the mind daily, so as to prevent the habit of spontaneous, involun-

tary wandering, you will find the power to accomplish results very materially increased. Get into this habit, gentlemen, and things will go well with you—they will.

During the period of pupilage, you have necessarily imbibed without asking questions. You have received the teachings of the masters with the confidence that attaches to youth and inexperience. Now, however, you are approaching a period when each one will set up for himself intellectually—will be compelled to depend upon his own resources. This period is an important one. It has its dangers as well as responsibilities. Medicine has given rise, since its first introduction, to speculation—speculation—speculation. You will soon find on every hand those who will say : “ lo here, lo there ! ” The country has never been without a pretty fair supply of those proposing their services in healing the sick. Quite a large number at the present day claim to be oracles—claim the right to instruct the race. In looking over the movements, we find new doctrines are proposed and old ones burnished up a little and proposed as new. More and worse, dogmatisms, absurd and contradictory, are made to serve as foundations for practice, and people are counted uncultivated or self-willed who do not subscribe to them.

You might ask, just here : “ How do such things come to pass ? I thought medicine a science—an exact, certain science—a something not authorizing diversity in the way of opinions.” Well, gentlemen, if we except a few metaphysical axioms, there is nothing certain. Things only rise in the scale of certitude to this point—a *high degree of probability*. Chemistry, so universally credited as being certain, is far from it. Its revelations are mere probabilities. The same remark may be made of physiology and therapeutics, and indeed of all the physical sciences. But in medicine, especially the practical part of it, or *therapeutics*, a great variety of circumstances conspire to get up fogginess in the intellectual atmosphere. The trouble is in the appreciation of agencies, and hence the difficulty of knowing to what to attribute results. We invoke Reason, but Reason can’t operate—no correct method of getting propositions. Then we take to Experience as the next

best thing. But when we adopt this common mode of testing things in therapeutics, all classes, embracing every phase of intellect, rush forward wishing to be heard. It is because of this the country has been filled with "systems," so-called, conflicting and absurd. The most of them, fortunately for humanity, have had an ephemeral existence, and on this account have been limited in the mischief produced. It has, however, happened every once in a while, that members of the *regular profession* have been visited in strange ways. Some of those we had supposed entirely sound, have lately had spells. Forbes, and Bigelow, and Holmes, have seen things and been wrought upon; and they say: "whereas we were once blind, we can now see." They come out of their paroxysms happy, and in the overflowings of their hearts they would have mankind fall down and confess their errors. Oliver Wendel would perhaps have us turn to the archives of poetry for language with which to express the darkness and sinfulness with which in former days we have been afflicted. For the want of something more radical, he would put the following immortal couplet into the mouths of us all:

"In Adam's fall  
We sinned all."

Nothing has appeared like holier work to these gentlemen, than that of sweeping everything there is of therapeutics out of existence by the dash of the pen. "Throw all of the medicines into the ocean," says the author of "Currents and Counter Currents," "and buy a *silver hoe*." "Too much medicine, too much, gentlemen," says the author of "Nature and Art in the Cure of Disease." "You do more harm than good." "You were sent into the world, gentlemen, not to expect that drugs, in and of themselves, are able to accomplish much, if anything, but to look to Nature as the power and the only power that should be trusted in the work of healing disease."

Perhaps now the race would have went back to wearing bear-skins, and to the practice of laying their sick by the road-side for prescriptious, had not these philanthropists made their appearance.

Sir John Forbes feels finely (pardon the alliteration), no doubt, on being knighted by the English government; but posterity may not be so well satisfied with his labors. Every region has to have its poet. Really there seems to be such a thing as *endemic* poetry. The author of "Currents and Counter Currents" figures in this kind of literature, and is excusable for ornamenting it once in a while with things from physic. There is a mighty disposition in some persons to be friendly in the way of furnishing the rest of mankind with opinions. This is very kind, certainly, and thoughtful, too. Hippocrates, who first placed medicine on a philosophical basis, and all those who have been adding by observation and experiment to the common stock for the last two thousand years or more, were mere nodding Homers, good as showing the steps from chaos to order, but unworthy of confidence at the present day. It matters nothing to these gentlemen what has been established, conclusively established by all the rules of evidence. With them, a little close communion with the imagination, in the closet, is entitled to much more regard. Well now, gentlemen, none of us wishes to be impertinent, of course, but may we not in all modesty inquire what has been contributed to medical science by these innovators? What has the author of "Currents and Counter Currents," or the author of "Nature and Art in the Cure of Disease," added to our stock of knowledge? What single thought beyond the engendering of skepticism and the setting of the example of chiming in with the *ad captandum* flings of scoffers, have they furnished us with? They are nice gentlemen—very clever in their way—good-hearted—wishing the race well, too. But their doctrines, which virtually sweep by the board pretty much everything there is of therapeutics, are a little too much. May we not ask the privilege of a little time for making up our minds? They, too, would have us believe that they are very philosophical, very cautious and careful in their investigations—that they have stood on an elevated platform, and looked through the errors of the profession with profoundest sagacity. Still it may be doubted whether any additional endowment, over and above what falls to the lot of

an ordinary specimen of the race, has been vouchsafed to them. The truth is, these geniuses have very tamely surrendered themselves to the god of Sophistry, and he has given them the “*sophism of objections*” with which to amuse themselves. As all know, objections can be made against anything, everything. But the question is this: against which may most objections be urged? Against the doctrines objected to, or the doctrines of the objector? The latter will, in nine cases out of ten, be found the more vulnerable. And this is true of the examples before us. More objections may be urged against the doctrines of Forbes and Holmes, than against what they have criticised.

In this connection, I am happy in being able to assure you that a brighter day is beginning to dawn for medicine. The mind of the age is improving in the more substantial of its faculties. It is beginning to see through the nonsense and empty-headed philosophy that has been preying for some time upon progress. The mere innovator, whether in or out of the profession, is about to be appreciated. Moves made merely for notoriety, or for the purpose of creating a sensation, are about to be diagnosed. The taste of the age is utility—something that has actual value in it, or that leads to valuable results. What is medicine to us or to the world, if by a knowledge of it we are unable to cure disease, lengthen life, mitigate suffering?

Having heard during your attendance on the lectures more or less on the comparative powers of Nature and Art in the cure of disease, it will probably become a source of anxious thought to you to know how far to trust the one, and how much confidence to place in the other. “Must I stand still,” inquires the young practitioner, “and trust to Nature to accomplish the cure? or must I interfere—take the case out of Nature’s hands, and attempt to cure it with medicaments?”

Well, gentlemen, I can only say to you that I like old Madam Nature very much. She is grand; she is powerful; and does things that surprises us all. Make her acquaintance, at least, I suggest, and notice the beauty, efficiency, and completeness of her

curative processes. Among inferior animals she not only cures all ordinary diseases, but she sometimes makes a whole limb, or supplies even a head that has been lost. She is not powerful to the same extent over the human organism. Yet do we not see her every day repairing organs and supplying minor parts that have been lost? How often, too, do we see her take up a case that we have abandoned as hopeless, and cure it perfectly? I tell you, young gentlemen, that it would not be a bad move for you to take a few lessons while you are young from this old lady.

But, gentlemen, notwithstanding all of this, and I might have said much more, there are some things that Nature cannot do—some things that are too much for her. Here it is, therefore, that the use of drugs comes in. These are substances also armed with curative powers, and powerful often after Nature has succumbed. I know that there is a little diversity of opinion in the profession as it regards the quantity of drugs that should be used in the cure of diseases. The fashion is small doses. There is a little concealed infidelity at the bottom of this. Beware of it, for it leads to negation, if not to perdition. The truth is, there is really no such thing, in actual practice, as *small* or *large* doses of medicine; the dose is fixed by the character of the case, and not by the number of grains it may happen to weigh. Half a grain of quinine would be poisonous, on account of its quantity merely, in some cases; while, in other cases, fifty grains might prove inert from the same cause. It is the case, I repeat, that makes the dose. Any quantity of quinine, less than that necessary to cure an intermittent, is not entitled to the name of a dose. Allow me then to suggest neither *large* doses nor *small* doses, but scientific doses—doses that will be followed with positive effects. Exercise, gentlemen, faith in your medicines. You may trust many of them to the fullest extent, and not be disappointed.

Your vocation, however, gentlemen, does not terminate in the work of curing disease. A more important field of labor, if possible, is before you. It is the *prevention* of disease. The greatest work of medical men of late years has been in this line. See how

small-pox has been defied and driven from the country by vaccination, and how the period of human life in Europe and America has been extended and happyfied by improvements in hygiene. There is still room for further improvements in every neighborhood, city and town of our widely extended country. In whatever region you may chance to locate, you will find sources of disease connected with the geology, hydrology, or meteorology thereof. Here you may labor in providing against what, when developed, often proves the scourge of a neighborhood. Such labors will rank you among men of science and the benefactors of the age.

In conclusion, gentlemen, and in behalf of the Faculty of Starling Medical College, I bid you farewell. Go in *peace*, and may the example of that good man Hippocrates be before you always.

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*Letter from DR. W. A. BROWN, Surgeon in the Army.*

U. S. HOSPITAL No. 5,  
GALLATIN, Tenn., April 18, 1863.

*My dear Doctor:* I send you a consolidated mortality table of the hospitals at this post, for the months of December, January, February and March. You will doubtless be surprised at the per centum of deaths, but could you have seen the class of patients, it would have been fully explained to you. The great majority of the patients were men who had been transported in ambulances from Kentucky, who had given out on the march after Bragg, and were dropped at this post by the different divisions as they passed through to Nashville, during December and January. They were mostly members of the new regiments, who joined the army at Louisville, and were prostrated and broken down by the forced march through Kentucky, being put with the veteran troops who had become inured to the service, by the campaign through Mississippi and Alabama. Some of those new regiments, immediately after that march, were reduced to one-third the number of men with which they left Louisville. When the hospitals were opened,

no time was had for preparation, or could any consideration be given to the adaptativeness of the buildings used for the purpose. The men were left in colleges, store-rooms, churches and dwelling-houses by the different regiments as the army was moving, and surgeons detailed to attend them.

When the medical officer received his orders and reported for duty, he would find a number of exceedingly sick men strewn upon the floor of some building, with no covering but a blanket and a knapsack for a pillow—without a pallet of straw to lie on—without hospital-steward or nurses, medicines or food.

The first, and about the only thing he could do, would be to get some whisky, and give each man as much as he would drink, and then hunt for a commissary to draw something for them to eat. I never before saw such sorrowful distress, or worked so hard, and experienced such wear and tear of heart and mind. You may imagine the amount of labor the physician would undergo, when you think of him as hospital-steward, druggist, doctor, nurse, cook, and even undertaker, all himself. It was many weeks before the patients could be made comfortable or even decently clean.

Surgeon Hamilton, Medical Director of the post, deserves credit for his energy in obtaining supplies from Louisville with as much promptness as was possible, and the zeal he displayed in alleviating the distress with which he was surrounded. At this time communication was interrupted between Louisville and Gallatin, in consequence of guerilla raids along the line of railroad, and medical supplies were received only after great delay, and coming by river by way of Nashville.

The disease was of a peculiar malignant type, and overcrowding in illy ventilated apartments, and the absence of all those influences so necessary to low forms of disease, rendered medical treatment of little account. Typhoid fever and chronic diarrhea, dangerous and obstinate diseases in civil practice, are much more so in army hospitals, and under the limited and necessarily insufficient means for their management at the command of the military practitioner. A typhoid tendency was noticeable in most

diseases admitted to hospital treatment, and they were all equally obstinate and intractable. The treatment was wholly supportive, and the prescription-books of the hospitals will show alcholic stimulants, quinine and beef tea to have been the principal articles prescribed. The nursing was as good as can be commanded in the army, but was, of course, far short of what it should have been. I cannot refrain from alluding in this connection to two noble and patriotic women from Indianapolis, who came here in December, and labored most incessantly for many weeks, alleviating much suffering, and doing an incalculable amount of good.

The hospitals are at present in most excellent condition, and in possession of everything that can add to the comfort and welfare of the sick. The wards are kept very clean, and the bedding clean and comfortable, the diet of proper kind and quality, and the nurses, under several months' instruction, attentive and skillful.

*Mortality Statistics of the General Hospitals at the Military Post of Gallatin, Tenn., from December 1, 1862, to March 31, 1863.  
By Wm. A. Brown, in charge of U. S. Hospital No. 5.*

DISEASES.	Dec., '62.		Jan., '63.		Feb.		March.		Whole No. admitted from Dec. 1 to March 31.	Whole No. of deaths from Dec. 1 to March 31.	
	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.			
<i>Zymotic Diseases.</i>											
Typhoid fever .....	198	61	85	31	46	24	16	8	335	124	
Typhus fever.....	.....	2	.....	4	7	1	.....	.....	7	7	
Typho-malarial fever.....	.....	1	.....	.....	.....	.....	.....	.....	1	.....	
Remittent fever.....	31	1	27	1	18	2	23	1	119	5	
Intermit- tent.....	Quotidian .	31	.....	3	.....	6	2	14	24	3	
	Tertian....	15	.....	6	.....	.....	.....	.....	21	.....	
	Congestive	4	.....	11	.....	.....	.....	.....	15	.....	
Diarrhoea ..	Acute....	30	.....	.....	3	.....	8	.....	41	.....	
	Chronic .	123	21	98	18	31	22	26	6	298	67
Dysentery .	Acute....	4	.....	1	1	6	.....	.....	11	1	
	Chronic .	2	1	8	1	4	1	1	10	4	
Erysipelas.....	58	12	22	7	21	8	8	4	109	31	
Measles.....	207	30	14	3	4	8	2	2	227	43	
Smallpox.....	.....	.....	.....	.....	3	.....	1	.....	4	.....	
Diphtheria .....	.....	.....	.....	.....	.....	.....	4	2	4	2	

## Mortality Statistics—Continued.

DISEASES.	Dec., '62.	Jan., '63.	Feb.		March.		Whole No. admitted from Dec. 1 to March 31.	Whole No. of deaths from Dec. 1 to March 31.
	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.		
Mumps.....	10		3	1			13	1
Influenza.....		1	6				7	
Syphilis.....	1		1		2		4	
Gonorrhœa.....	9	1					10	
Orchitis (gonorrhœal).....		2					2	
<i>Cachectic Diseases.</i>								
Rheumatism { Acute....	11	3	2	1	9	1	25	2
{ Chronic.....	41	13	14		8		76	1
Anæmia.....	136	1	42	1	19	3	281	14
Idiopathic dropsy.....	1	1			1		2	1
Tumors.....	2		1				3	
Consumption.....	34	3	11	8	15	5	68	17
Scrofula .....	2				1		3	
<i>Monorganic Diseases.</i>								
Apoplexy (cerebral).....		1	1	1			2	2
Epilepsy.....		3	1	2	1		6	1
Cerebritis.....	2	1		1			3	2
Spinal meningitis.....	1		5		2		8	
Nostalgia.....	1						1	
Neuralgia.....	4				6		10	
Paralysis.....	2	2	2	1	1	1	7	2
Tetanus.....	1			1		1	3	
Conjunctivitis.....	2	3		3	3		11	
Earache.....	1			1			2	
Nervous deafness .....	1						1	
Otorrhœa .....	1						1	
Varicocele .....	1						2	
Varicose veins.....					1		1	
Asthma.....	1		1				2	
Bronchitis. { Acute....	16	13	9	1	4	1	42	4
{ Chronic.....	1	7	10		4		22	
Laryngitis.....		2	1		2		5	
Pneumonia.....	20	2	24	11	15	3	71	20
Pleuritis.....	40	8			6		48	8
Hemoptysis.....	1	1					2	1
Colic.....	4				1		5	
Constipation.....	1				1		2	
Dropsy from hep. dis.	2	1	3		2		7	1
Dyspepsia .....	2				3		5	
Hernia ... { Tern.....								
{ Inguinal.....	1						1	
Tonsilitis.....	6						6	
Gastritis.....	2				2		4	
Hepatitis { Acute....	3	6	1	2	4	1	14	3
{ Chronic.....	6	.			5		11	
Jaundice.....	20	14	2	7	5		46	2

*Mortality Statistics—Continued.*

DISEASES.	Dec., '62.		Jan., '63.		Feb.		March.		Whole No. admitted from Dec. 1 to March 31.	Whole No. of deaths from Dec. 1 to March 31.
	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.		
Diabetes .....	8	.....	.....	.....	.....	.....	.....	.....	8	.....
Nephritis.....	.....	3	.....	4	.....	2	.....	1	9	1
Enteritis.....	.....	1	1	2	.....	1	.....	.....	4	1
Pericarditis.....	.....	.....	.....	1	1	.....	.....	.....	1	1
Endocarditis.....	.....	.....	.....	3	.....	3	1	.....	6	1
Cystitis.....	.....	.....	.....	.....	.....	.....	1	.....	1	.....
Scurvy.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
Abscess.....	4	.....	.....	.....	.....	.....	3	.....	7	.....
Piles.....	2	.....	3	.....	.....	.....	.....	.....	5	.....
Carbuncle.....	1	.....	.....	.....	.....	.....	.....	.....	1	.....
Valvular dis. of heart	.....	1	.....	2	.....	3	1	.....	6	1

## GENERAL SUMMARY.

	Taken sick during the month.	Returned to duty.	Discharged.	Died.
December.....	1,250	330	3	149
January.....	458	376	90	208
February .....	335	163	188	105
March.....	250	271	107	44
Total.....	2,293	1,140	388	501

*On Diphtheria with Laryngeal Complications.* By J. R. BLACK,  
M. D., Surg. 113th Reg. O. V. I.

In simple exudite, with a gray patch on one or both tonsils, very simple treatment is often wholly adequate. But when the patches are ragged and extensive, or when the disease, after being apparently arrested, suddenly attacks the glottis and larynx, the import of the disease is generally acknowledged to be indeed serious. In a somewhat extensive experience with this affliction, death appears to me to be induced in two ways: 1st. By extension of the disease into the air passages, causing death precisely as in croup; and 2d. By toxemia, so affecting the blood as to almost wholly de-

stroy its red corpuscles. The former is the more rapid and common mode of death. It is also, therefore, one which the practitioner should especially guard against, be watchful of its invasion, and prompt in his measures to arrest and ameliorate. Like others with whom I have conversed, at one period of my life I looked upon this complication as one necessarily fatal; so telling the friends, and assuring them that this was my experience and that of my practitioner with whom I had had intercourse. But I feel glad to think that I am able to recede from that conclusion, and say that, though a diphtheric patient may have croupal cough, stridulous respiration, and a voice reduced to whispers, there yet is hope.

The first case, in which the line of treatment I now rely upon, and which by the way as well illustrates it as any other, was in the person of the daughter of J. T——n, Esq., of Licking Co. She was of delicate and strumous habit, about eight years of age, and residing in a district ordinarily deemed malarious. The disease had existed two days prior to my first visit, with considerable fever, and extension of patches on each side down from the tonsils as far as could be seen. Already there was slight huskiness of the voice, but no cough; the respiration being only somewhat heavy. An emetic of ipecac. ordered; the throat lightly but thoroughly touched with a probang saturated with nit. argenti-solution (grs. x to the ʒj.) Internally the chloride of potassa was given, containing an excess of hydrochloric acid. Under this treatment the febrile symptoms subsided, but the voice steadily lost its clearness, being reduced to whispers; the respiration, especially every evening, became exceedingly oppressed, the cough of the clear ringing metallic tone, which, as soon as it terminated, the child would drop asleep—the breathing, meantime, being so oppressive as to be heard from some distance outside of the house. In this extremity resort was had to an emetic of ipecacuanha every evening, or rather night—just as soon as the dispnea became very embarrassing to the patient. The immediate effect was the ejection of large quantities of tough, glary mucous, and, later in the history of the case, of shreds of membrane. The relief to the patient was gen-

erally well marked, the breathing and cough being relieved, though yet stertorous and metallic. During the day the cough was peculiarly harsh and rough, and oftentimes a distinct flapping of patches of membrane in the larynx could be heard. The sputa was frequently observed to be streaked with blood; the whole amount expectorated, however, being extremely limited. The disposition to cough was repressed by the child as much as possible, and every act of the kind appeared to give great pain in the larynx. The only means practicable for getting rid of the mucous, shreds of membrane, and its debris, that would accumulate there, was free and decided emesis. If the first did not act satisfactorily, the medicine was immediately repeated.

This was the only depressant used in treatment. Regarding the disease as distinctly asthenic, antiphlogistics and depurants are used, if used at all, rarely and with caution. As soon as the grade of fever becomes lowered, the tincture of iron is given three or four times per day; and when the action of the vital forces appears to lower rapidly, sulph. quinia, egg-nog and beef-tea are important adjuncts to treatment.

Under this line of treatment, cases apparently desperate may be conducted to a successful issue. For days, and in the above example, not for two weeks, could the patient be said to be clearly convalescent. Sixteen days elapsed before the voice began to throw off its huskiness, and the patient able to speak above a whisper. A peculiarity of this as well as of other like examples, was the very offensive nasal twang to the voice, which, in some instances, persisted for months. It appears to result from a want of integrity in the mucous surface, but more especially in deficient tonicity of the palatal tissues. Stimulating gargles, and the use of coal oil (an excellent agent) externally, soon produces a change for the better.

## American and Foreign Intelligence.

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[Communicated for the Boston Medical and Surgical Journal.]

*The Senses of Smell and Taste.* By MR. NORTON FOLSOM.  
An Essay to which the Prize of the Boylston Medical Society was awarded.

These senses are so mingled in action, that their separate offices are at first difficult to determine; and even the exact locality of the perceptions which constitute the two senses can hardly be pointed out without careful observation. We instinctively know that we smell oderiferous substances when they are presented to the nose, and that we taste sapid substances in the mouth, but more than this we can only derive from experiment.

The anatomy of the mouth and nose is briefly as follows: The mouth is an oblong cavity, with an arched roof, lined with mucous membrane, and opening into the pharynx through the arches of the palate. It contains the tongue, which is a muscular organ, capable of applying itself to any part of the mouth, and covered also with mucous membrane, which presents, on the dorsal aspect, three kinds of papillæ; first, the circumvallate, seven to fifteen in number, about one-fourth of an inch in diameter, soft, and arranged in the form of the letter **V** at the root of the organ; second, the fungiform, soft, but much smaller than the circumvallate, distributed irregularly over the dorsum, but much more numerous at the tip and edges; and third, the filiform, very minute, and quite hard and stiff, covering the whole upper surface, between the other papillæ. The epithelium of the circumvallate and fungiform varieties is very thin, that of the filiform quite thick and tough.

The hard palate is the roof of the mouth. Attached to its posterior border, and hanging like a vail or curtain between the mouth and pharynx, is the soft palate, which is muscular, and capable of being applied to the posterior wall of the pharynx, so as to entirely separate the cavities of the nose and the mouth.

The pharynx is the upper extremity of the œsophagus, and opens above into the posterior nares. These parts are all covered with mucous membrane, continuous with that of the mouth, and, like it, consisting of the laminated pavement-epithelium.

The nose consists of two pyramidal cavities, opening externally in front, and into the pharynx behind. They are entirely separated by a cartilaginous septum. Each cavity is partially divided by three spongy bones into three passages, called respectively the superior, middle, and inferior meatus. All these parts are covered with mucous membrane, which differs in character, however, in

different localities. As far down as the middle spongy bone, the epithelium is of the "squamose cylinder"<sup>\*</sup> variety, not ciliated, and the membrane is thick and brownish. Below this, and as far posteriorly as the orifice of the Eustachian tube, the epithelium is ciliated, exactly like that of the larynx and trachea, from which we might infer that this lower portion of the cavity is associated with the respiratory function rather than with the special sensation, as is indeed the case.

The nearly-closed cavities communicating with the nostrils, namely, the ethmoidal cells, the sphenoidal and frontal sinuses, and the antrum of Highmore, have no connection with the sense of smell, as has been repeatedly demonstrated by experiment in regard to the two last mentioned.<sup>†</sup>

The nerves distributed to these organs are as follows :

- |               |  |
|---------------|--|
| To the nose,  | 1. The olfactory.<br>2. Branches of the first and second divisions of the trifacial.<br>3. Branches from the spheno-palatine ganglion of the sympathetic.            |
| To the mouth, | 1. Branches of the third division of the trifacial.<br>2. The glosso-pharyngeal.<br>3. The hypo-glossal.<br>4. Branches from the spheno-palatine and otic ganglions. |

The olfactory nerves, within the cranium, arise from the base of the brain, and rest upon the cribriform plate of the ethmoid bone, which is immediately over the superior spongy bone. From it arise filaments, which descend upon the septum and upon the superior and middle spongy bones, and cannot be traced farther down than the non-ciliated mucous membrane extends. They differ from ordinary nerve-fibres in wanting the axis-cylinder, and in their gelatinous consistency and gray color. They terminate, according to late investigators, in club-shaped bodies, lying immediately beneath the epithelium, which are presumed to be ganglion-cells, like those which constitute the gray cerebral matter.<sup>‡</sup>

The nasal branches of the first and second divisions of the trifacial supply the mucous membrane of the nose throughout.

The spheno-palatine and otic ganglions send branches to the nasal mucous membrane, and also to the muscles of the soft palate.

The branches of the third division of the trifacial supply the mucous membrane of the mouth, and a large trunk called the gus-

<sup>\*</sup> Kolliker. *Human Microscopical Anatomy.*

<sup>†</sup> J. Muller. *Elements of Physiology.*

<sup>‡</sup> Oehl, as quoted in the Year Book of the New Sydenham Society for 1859.

Ecker, as quoted by Schroeder Van der Kolk in researches "on the Spinal Cord and Medulla Oblongata."

tatory nerve is distributed to the anterior two-thirds of the dorsum of the tongue, where its fibres enter the fungiform papillæ.

The glosso-pharyngeal nerve supplies the muscles and mucous membrane of the pharynx and base of the tongue, and a branch passes forward to the circumvallate papillæ, where it forms a considerable plexus in each of them.

The hypo-glossal is distributed exclusively to the muscles of the tongue.

In a morphological point of view, the olfactory apparatus is to be considered as a cerebral ganglion, belonging, with the eye and the ear, to a series of three organs of special sense, which are disposed in the intervals between the four cranial vertebræ. Their nerves differ from ordinary nerves in having ganglion-cells, or gray matter, at their peripheral extremities, namely, the olfactory filaments of the retina, and the cochlear and vestiubular branches of the auditory nerve. This view is corroborated by the original development of these nerves or ganglions, which grow out from the cerebral substance, instead of being formed *in situ*, as all other nerves are.

In considering the functions of these various nerves, we may exclude the fibres from the sympathetic (believing them only to govern the nutrition of the parts, and to cause certain involuntary movements of the palate), and the hypo-glossal, which is the motor of the tongue.

When a substance to be tasted is placed in the mouth, we press it with the upper surface of the tongue against the palate, and thus force its particles in every direction. The saliva, poured in by its glands responsive to the stimulus, aids in dissolving and disseminating the particles over the mouth. When the substance reaches the fauces, and as it is swallowed, a current of air escapes from the glottis and carries any volatile portion to the posterior nares, where it is liable to affect the sense of smell. Plainly, therefore, in order to separate the two sensations, we must either shut off the cavity of the nose during the tasting, which can be done by most persons voluntarily by breathing through the mouth and applying the soft palate to the back of the pharynx, or we must interrupt the current of air through the nares, which can be done by holding the nose with the fingers.

We recognize two classes of impressions made by articles of food—one of *savors*, of which salt affords an example; the other of *flavors*, as that of vanilla. Most substances have both properties; thus a strawberry has an acid and a sweet taste, besides its own delicious flavor.

The distinction between these two classes, has not, indeed, been fully made by physiologists until of late; and still less has the fact been recognized, that *all flavors are perceived by the organ of smell only*, reducing the number of impressions which the organ of taste is capable of receiving the four only, viz., Sweet, Sour, Salt, and Bitter. This can, however, be easily and certainly de-

monstrated. Let the nose be closed by the fingers, or let the posterior nares be shut off by the soft palate, and a solution of vanilla be taken into the mouth and swallowed. It cannot be distinguished from water. Soup, nutmeg, cheese, pineapple, and assa-fœtida are alike entirely *flavorless* under similar conditions, though the *ordinary sensibility* of the mucous membrane, and the perception of the four savors above mentioned, may enable us to apprehend certain *other* qualities which distinguish these substances. The common practice of holding a child's nose while it swallows disagreeable medicine, has its origin in this peculiar relation of these two senses.

We have now to consider the exact locality of the sensations produced by these four classes of stimuli. Experiments have been tried by various physiologists with entirely different results, which may be attributed to want of care and to not recognizing the fact that all *flavors* should be excluded from the investigation. All agree, however, in this—that, to be tasted, a substance must be brought to the sensitive part *in solution*, inasmuch as insoluble substances have no taste.

In the experiments performed by the writer, solutions of white sugar, tartaric acid, common salt, and sulphate of quinine, were carefully applied to various parts of the mouth and fauces by means of a camel's-hair pencil, pains being taken that no excess of fluid should be used, which might diffuse itself over other parts than that directly under observation. The following results were uniformly obtained on six different individuals, they all being unaware of the substances used in each experiment.

1st. The upper surface, tip, and edges of the tongue, as far back as to include the circumvallate papillæ, are the *only* parts concerned in the sense of taste; the hard and soft palate, tonsils, pharynx, lips, gums, and under surface of the tongue being entirely destitute of this sense.

2d. The circumvallate papillæ are far the most sensitive portion of the organ. They perceive at once very minute quantities of any one of the four substances used, and they are particularly sensitive to bitter. Irritation of these papillæ by pressure, or placing a drop of cold water on them, excites decided sensations of bitterness.

3d. The central portion of the dorsum of the tongue, to within half an inch of the edge, is the least sensitive portion. Substances are distinguished with difficulty, or not at all, when applied to it.

4th. The edges and tip of the tongue are quite sensitive, the edges becoming less so as we come forward. They recognize all the four classes of substances. The tip detects bitter with great difficulty, but is particularly sensitive to sweet. A sweet sensation, sometimes mingled with sour or salt, is produced by gently tapping it with any insipid soft substance.

The tongue possesses *ordinary sensibility* to a marked degree, es-

pecially at its tip, and in this way detects the size, shape, and texture of substances. It is in the same way that the qualities of pungency and astringency are perceived, which fact is proved by their being nearly as perceptible to the conjunctiva, or any other mucous membrane possessing ordinary sensibility, as to the mouth. A solution of tannin, applied to the circumvallate papillæ, gives the sensation of extreme bitterness, while at the tip it produces a slight sweetish taste, especially after it has been washed off by the saliva. These sensations are entirely distinct from the puckering, which, as just said, is perceived by other mucous membranes. The application of a solution of potassa gives nearly the same result, proving that there is no such thing as a distinct alkaline taste.

The results of the experiments of the present writer differ from those of a recent authority.\* who states that the hard and soft palate possess the sense of taste to a considerable degree. It is difficult to prevent fluids applied to these parts from trickling down upon the tongue; but if this is guarded against, no sensation is produced, even by a strong solution of sapid substance, except that of stimulation.

These facts make it almost certain that the gustatory branch of the trifacial, through the fungiform, and the anterior branch of the glosso-pharyngeal, through the circumvallate papillæ, share the office of tasting between them. This is also proved by cases where the sense of taste has been lost in the anterior part of the tongue, by the paralysis of the trifacial nerve, while it continued unimpaired at the root.<sup>†</sup>

We should hardly expect to find this similarity of action between two distinct nerves, especially as the whole of the trifacial, with the exception of the gustatory branch, is a nerve of ordinary sensation. But it is shown by recent microscopic investigation, that the sensitive root of the trifacial nerve receives certain fibres from the root of the glosso-pharyngeal in the substance of the medulla oblongata,<sup>‡</sup> and it is at least *possible* that these fibres may enter the lower division, and be distributed with the gustatory branch, thus giving it the power of tasting.

These nerves do not differ in structure from the nerves of ordinary sensation, and yet would seem to perform the office of special sense. But tasting is, as we have seen, a much simpler action than at first appears, and should rather be classed with the functions of hunger, thirst, satiety, nausea, and the distress which is felt impelling us to breathe when respiration is suspended (functions performed by the pneumogastric), than with the higher and more complicated special senses. In connection with this, we may

\* Drielsma, as quoted in the Year Book of the New Sydenham Society for 1860.

† Todd and Bowman. *Physiology*.

‡ Schroeder Van der Kolk, in researches "on the Spinal Cord and Medulla Oblongata." New Sydenham Society. 1859.

notice that, morphologically, the glosso-pharyngeal and pneumogastric belong to the same pair of cranial nerves.

Certain substances have been observed to produce sensations, painful or otherwise, when applied to perfectly sound teeth. As it has been ascertained that fluids are readily and rapidly absorbed by the tubules of the dental structure, and conveyed to the pulp cavity,\* it is highly probable that the sensation is excited at the latter organ.

The sense of smell is entirely performed by the olfactory nerve. This is proved by the corresponding increase of the relative size of the nerve in those animals which are known to possess a particularly acute power of scent, and also by the fact that in paralysis of the trifacial the sense remains unimpaired. The branches of the trifacial which are distributed to the mucous membrane of the lower and anterior parts of the nasal cavity, endow it with a high degree of *common sensibility*, so as to guard the more delicate part of the organ from injury, by giving warning if we attempt to inhale any irritating vapor. This common sensibility appreciates the pungency of substances in the same way as in the case of any other mucous membrane. Many substances possess pungency besides odor, as ammonia and mustard, for example. These affect the conjunctiva almost as readily as the nose.

The organ of smell is affected by substances only when they are in the form of vapor; hence non-volatile substances have no smell. Vapors reach the organ in two ways. In the first place, a current of air may be drawn, by a forcible inspiration, so as to be directed by the external nose to the upper part of its cavity, and impinge upon the filaments of the olfactory nerve. If this air contains particles of any volatile substance, it gives rise to the sensation which we call *odor*. In the second place, if any volatile substance is taken into the mouth, and carried to the fauces, or swallowed, and a puff of air is allowed to escape from the larynx, it will be directed by the walls of the pharynx, so as to carry the particles of the substance directly to the upper part of the nares, where it produces what we describe as *flavor*. We unconsciously emit this current of air, immediately after swallowing, and when we are trying to taste anything. Thus we see that "scent and flavor are the same impression on the same nerve at the same part."†

Flavors are connected, in a great majority of instances, with food. This is the reason that the smell of roast meat so strongly excites the appetite of a hungry man. The exercise of the sense of taste is simultaneous with that of smell, in the act of eating, which accounts for the difficulty of distinguishing between them.

We can only classify these perceptions so far as to say that they are agreeable or disagreeable. Even this distinction cannot always be made; thus the faint smell of putrid urine closely resembles

\* Dr. Miel, a dentist, as quoted by Todd and Bowman.

† Herbert Mayo. *The Nervous System and its Functions.* 1842.

that of sandal-wood. What is offensive to one person may be pleasant to another. The desire for certain flavors is entirely acquired, and the infant will reject with loathing what may become its favorite food in after life. An agreeable flavor or odor sometimes becomes disagreeable by long continuance.

The odors of substances which are similar in other respects are generally alike, so that we may attempt to classify them according to the sources from which they are derived. The smells of plants are nearly, if not quite all, derived from essential oils. The various ethers have kindred odors.

Substances differ as to the intensity of their odor without reference to their volatility. Thus the smell of musk is more intense than that of ether.

In man, this sense only serves the purpose of giving him pleasure, and guides him to a slight extent in the choice of food; but with the lower animals, it not only becomes necessary in the detection and selection of food, but warns of the approach of friends or enemies, and performs numerous other duties, sometimes attaining a delicacy which renders it nearly equal in rank to sight and hearing. The hunting-dog and the antelope are well-known examples of this. The sexual appetite is frequently excited through this sense.

But in man, this sense is not commonly developed to its fullest possible extent. It is well known that the senses possess a certain sort of compensating power; that is, if one is lost, the others become more acute. The capabilities of this sense in the human being are well exemplified by the case of James Mitchell, who was blind, deaf and dumb from birth, and distinguished between persons principally by smell. It enabled him to detect the entrance of a stranger at once.\*

It is recorded of the wine-tasters of Spain, that they can distinguish between five hundred different kinds of wine; and instances are familiar to every one, of the faculty of telling several kinds of wine, or several varieties of the same kind, many times in succession, with the eyes covered. A well-known gentleman of Boston is an example.

The tea-tasters to be found in great commercial cities acquire very nice discriminating powers, frequently determining the investment of large sums of money by merely tasting a specimen of tea.

Persons accustomed to the use of tobacco can at once distinguish the variety brought from Havana, and even, in some instances, the particular plantation from which it comes.

The French cultivate the olfactory sense to a much greater extent than most other nations, not only in the art of perfumery, but in cookery, which becomes almost a fine art with them; and there seems to be no reason why the imagination should not be reached through this organ as well as through the eye and the ear. The scent of the freshly-opened rose, or the flavor of the strawberry,

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\* Carpenter. *Human Physiology.*

has as valid a claim to the notice of the poet as the song of the lark, or the beauty of sunset. At all events, much pleasure and practical advantage might be gained by its systematic cultivation, even if we should never rival the powers of "the Monk of Prague, mentioned in the Journal of the Learned of the Year 1684."

"He not only knew different Persons by the Smell, but, what is much more singular, could, we are told, distinguish a chaste Woman, married or unmarried, from one that was not so. This Religious had begun to write a new Treatise on Odours, when he died, very much lamented by the Gentlemen who record this Story of him. For my Part, I do not know whether a Man of such Talents would not have been dangerous to Society."\*

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*Clinical Lecture on Rheumatism.* Delivered at St. George's Hospital. By HENRY WM. FULLER, M.D., Physician to the Hospital.

*Gentlemen :* In my last lecture we discussed the treatment of acute rheumatism, and I adduced examples from your own experience in the wards to prove that in the judicious employment of alkalies in full doses we have an efficient antidote to the rheumatic poison, and a sure protection against inflammation of the heart. It happens, however, that either from the neglect of this preventive treatment or from some time having been suffered to elapse before medical advice is sought, patients are not unfrequently attacked with endocarditis or pericarditis before they are admitted under our charge at the hospital, and it therefore becomes necessary that you should be fully prepared to encounter these formidable and often fatal complications of the disease.

I will take as a text for my remarks on this subject the case of E. K——, a weakly girl, aged eighteen, who was admitted on the 12th of December into Roseberry ward. She had been attacked with acute rheumatism two weeks prior to admission, and for some days had suffered severely from acute catching pain in the region of the heart.

On admission the skin was hot and perspiring; the hands and wrists were red, swollen, and exquisitely painful, and erythematous patches extended some distance up the right forearm; the tongue was furred, and greatly loaded; the bowels were reported open, and the urine clear, though high-colored and scanty; the pulse was 120, regular, but variable in strength; the respiration was very quick and shallow. There was great extension of the area of praecordial dullness, and the heart's sounds were almost inaudible; no exocardial or endocardial murmurs could be distinguished, and the firmest pressure with the stethoscope failed to produce one. Beef-tea was ordered as her diet; a large blister

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\* Le Cat. A Physical Essay on the Senses. 1750.

was placed over the region of the heart, and the following medicines were prescribed : Bicarbonate of potash, one drachm and a half; potassio-tartrate of soda, one drachm; tincture of opium, five minims; two ounces of acetate of ammonia draught; to be taken every four hours, with one scruple of citric acid. Three grains of calomel and one grain of opium, made into a pill, were ordered three times a day.

On the 14th the rheumatic pains were much relieved, the area of praecordial dullness had decreased, and the sounds of the heart were clearer and less distant, but still unaccompanied by murmur. The urine had become alkaline, so the mixture was repeated every six hours only, instead of every four hours. The pills were continued as before.

On the 15th exocardial friction-sound was audible for the first time. The urine continued alkaline, so the mixture was repeated only twice daily.

On the 18th the sounds of the heart were much clearer, and the sound of friction was beginning to decrease. The rheumatic pains had entirely ceased, and the urine was still alkaline. The mixture, therefore, was omitted, but the pills were continued as before.

On the 20th, the pulse, which had fallen to 80, had regained its steadiness, but it was very weak; the friction-sound still continued.

On the 27th the urine was pale and alkaline, although she had not taken any alkali since the 18th; there was slight fetor of the breath, the pulse was 88, and weak; the friction-sound was still audible, and the sounds of the heart were not so clear as they had been. The pill, therefore, was repeated, with the omission of two grains of calomel, and a blister was again applied to the region of the heart. Fish, also, was ordered for her dinner.

The symptoms now remained without much variation until the 1st of January, when she began to complain of cough and of a pain in the chest. On the 3d these symptoms were worse; there was considerable fever, the pulse having risen to 118; the face was flushed and the breathing hurried; she complained of pain in the left knee and ankle, and of increased pain in the chest; friction-sound was still heard over the heart, and bronchitic râles were audible over both sides of the chest; her pulse was weak and somewhat irregular; she was sweating profusely, the perspiration being faintly acid, and almost devoid of a rheumatic odour; and the urine was acid, but clear. A blister was again applied to the chest; a nitre draught, containing half a drachm of carbonate of potash, was given three times a day; the pill was continued, with the addition of two grains of calomel, and three ounces of sherry wine were ordered to be taken daily.

On the 5th the urine had become alkaline, the wine had not heated or excited her, and the pulse was still weak and irregular. The cinchona draught, with one scruple of bicarbonate of potash, was therefore substituted for the nitre draught, and the pills and wine were continued as before.

From this time she improved steadily. On the 8th the pills were omitted in consequence of slight tyalism. On the 10th the friction-sound was heard for the last time, and on the 22d she left the hospital, the action of the heart being regular, and its sounds clear and unaccompanied by murmur.

Now, this case affords a fair example of a severe attack of rheumatic pericarditis, and there are several points in relation to it to which I would direct your attention. In the first place, there was entire absence of exocardial murmur at the date of the patient's admission into the hospital, but nevertheless the existence of pericarditis was diagnosed, and treatment was adopted accordingly. You must have observed the same fact in other instances, and it is of importance that you should remember that mere absence of friction sound affords very imperfect evidence of the non-existence of pericarditis. The sound of friction implies the rubbing together of the two surfaces of the pericardium, roughened by the effusion of lymph, and, therefore, the presence of any large quantity of fluid in the pericardium necessarily puts a stop to the occurrence of friction by separating the two layers of the membrane. You will readily understand, then, that inasmuch as in certain cases effusion into the sac is very abundant, and takes place with great rapidity, you may happen not to see the patient, or may not examine his heart until after the sound of friction has ceased, in consequence of the occurrence of effusion. But shortness of breath, or a complaint of pain in the chest made by a patient suffering from rheumatic fever, should always arouse your suspicions as to the existence of pericarditis, and so also should marked irregularity in the force and frequency of the pulse. Under these, and, indeed, under all circumstances, it is your duty to examine carefully into the condition of the heart, and, in the absence of pleuritic and pulmonary disease, the presence of extended praecordial dullness and a muffled condition of the heart's sound is quite sufficient to render imperative the adoption of means to get rid of the effusion. In the case under consideration, as the area of praecordial dullness decreased, and the heart's sounds became clearer, the sound of friction became audible; but I would warn you not to suppose that your diagnosis has been wrong, simply because from first to last, you are unable to detect the presence of friction-sound. Extended praecordial dullness disappearing under treatment, and a muffling of the heart's sounds, which, after a time, is replaced by clearness of the sounds coincidently with the disappearance of the praecordial dullness, is quite sufficient to stamp the character of the disease. The fact that you have been unable to discover any friction sound during the absorption of the effused fluid, may be due to the rapidity with which adhesion has taken place, and the shortness of the time, therefore, for which the friction has continued, or it may be referable to the non effusion of lymph, on the anterior surface of the heart, and to the consequent non-transmission of the friction-sound to the parietes of the chest. In the case of W. G——, who was admitted into the Hope ward

on the 3d of April, there can be little doubt that this was the case; for although, as you will remember, he had all the general symptoms of pericarditis, and, with the exception of friction-sound, all the physical signs of the disease, and although under the influence of blisters, and calomel and opium, the symptoms all subsided, and the sounds of the heart became clear, yet from first to last no friction-sound was heard, although the heart was carefully examined daily.

The treatment of rheumatic pericarditis is a subject on which various opinions have been expressed, and I would therefore direct your attention to certain points in connection with it. Theoretically, the objects to be attained are—1st, the removal of the cause of irritation which first excites and subsequently keeps up the pericardial inflammation; 2d, the subjugation of the mischief which has been set up; 3d, the mitigation of its evil effects by inducing absorption of the fluid, or other products which are effused into the pericardial sac. The first object is to be compassed by the administration of alkalies, which, as I have shown you, have the power of preventing the accession of cardiac inflammation, and which also, by eliminating the rheumatic poison from the blood, do much towards removing the articular, cardiac, and other inflammations which are due to the presence of that poison in the system. The second and third objects are to be secured by the use of bloodletting, counter-irritation, and the administration of calomel, opium, and other remedies. In the case of E. K—, and in many other instances which have come under your observation in the wards, you have seen the plan of treatment I usually adopt. It is founded on the theoretical considerations just alluded to, and has proved eminently successful. The mixed alkalies are administered, calomel is pushed until the gums are slightly touched, and opium is given with it in quantity sufficient not only to restrain its purgative action, but to subdue the irritability of the system. At the outset of the disease, if the heart's action is very turbulent, a few leeches may be applied to the praecordial region, or a few ounces of blood may be drawn from the arm; but in the great majority of cases depletion is unnecessary if the alkalies are properly administered, and in most instances it proves mischievous by depressing the patient, and thus preventing the setting up of those actions whereby absorption of the inflammatory products and adhesion of the two layers of the pericardial membrane are effected. Blisters are serviceable, even from the first, but their efficacy is displayed so much more strikingly when liquid effusion has taken place into the pericardium, that I seldom have recourse to their assistance until the existence of effusion is unequivocally declared. In the case of E. K— a large amount of fluid existed in the pericardium at the date of her admission into the hospital, and the relief afforded by the blister was manifest in the increased clearness of the sounds of the heart, and the occurrence of pericardial friction, which within three days resulted from the two roughened surfaces

of the pericardial membrane having come into apposition in consequence of absorption of the effused fluid.

The importance of maintaining the strength of the patient whilst measures are being adopted for the relief of the local inflammation is well illustrated by the case of E. K.—. Up to a certain point all seemed going on well. The rheumatic pains subsided; the area of praecordial dullness gradually diminished; the heart's sounds became clearer; and, in short, all the symptoms betokened the disappearance of the rheumatism, and the absorption of the fluid products of the pericardial inflammation. Nevertheless, the friction-sound continued, adhesion of the two layers of the inflamed membrane did not occur, and recovery did not take place. The explanation of this is to be found in the feeble condition of the patient. Naturally a weakly person, she had undergone two weeks of severe suffering before her admission to the hospital, and although the measures then adopted for her relief very speedily caused a mitigation of her pain, and relieved the heart of the large amount of fluid which was oppressing it, it was impossible at once to impart that tone to the system which is essential to the rapid organization of effused lymph. The feeble pulse, the alkalinity of the urine, which continued notwithstanding the omission of the alkalies, and the profuse and scarcely acid perspiration which ensued, were the exponents of the cause which prevented the organization of the effused lymph. The exhaustion which those symptoms indicated was the true cause of the non-cessation of friction, and is usually the origin of the untoward symptoms by which death in pericarditis is preceded. Accordingly, when these symptoms fully declared themselves, and it became evident that, notwithstanding the absorption of the more fluid parts of the exudation, adhesion would not take place between the two layers of the pericardium, I deemed it necessary to endeavor to support her, and thus enable the reparative process to take place. From the first I had given her strong beef-tea; on the 27th I ordered her fish for dinner; on January 3d wine was prescribed; and on the 5th I gave her the cinchona draught, although up to this time there had been no diminution in the sound of friction. Strange remedies these, you will say, to subdue an acute serous inflammation! In truth they would be very strange remedies for such a purpose, but that was not the object for which they were administered. Blisters, and calomel and opium, and alkalies were the agents employed for that purpose; the food, the stimulant, and the bark were only given to support the general strength, and enable these agents to do their work. And right well they effected the object in view. From the time the bark and wine were administered the symptoms rapidly abated; the pulse regained its force and steadiness; the profuse, enfeebling perspiration ceased, and the friction-sound diminished, and soon disappeared altogether. Here, then, is an important practical point for your consideration. None of the functions of the body, and none of the actions which are necessary to the

reparation of the tissues, can go on properly in a person enfeebled beyond a certain point, and in the treatment of pericarditis, as of all other inflammatory diseases, it is essential to uphold the patient's strength directly you obtain evidence of constitutional exhaustion.—*Med. News and Library.*

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*Letter from Prof. Charles A. Lee.*

WINES, AND THE WINE-GROWING COUNTRIES.

COBLENZ ON THE RHINE, Sept. 21, 1862.

I am strongly tempted to forego medical subjects, hospitals, mineral waters, lunatic asylums, cretins, climate, etc., and expatiate upon the fascinating scenery of this renowned river; and I would begin by saying that its banks present every variety of wild and picturesque rocks, thick forests, and fertile plains; vineyards gently sloping or perched among lofty crags, where industry has won a domain among the fortresses of nature; whose banks are ornamented with populous cities, flourishing towns and villages, castles and ruins, with which a thousand legends are connected; with beautiful and romantic walls, and salutary mineral springs; and whose waters offer choice fish, as its banks produce the choicest wines. I have traced its course from the Swiss canton of the Grisons, where 241 glaciers contribute to supply its sources, and 56 romantic waterfalls diversify the scenery, down to this city, and have not ceased to admire its beauties at every step. But all this I forego, and remembering that I am writing only for medical men, I must confine myself to subjects in which they are more especially interested. I shall therefore speak at present of the Rhine wines, the culture of the vine, and the vintage in this region, together with other matters connected with the juice of the grape, believing that more definite information on these points is still a desideratum.

From Bonn to Coblenz, and from this city to Mayence, the country is covered with vineyards, although to the north of this the vines are of little comparative note. The latitude of this city is nearly  $51^{\circ}$ , corresponding with the northern shores of Newfoundland, or the southern borders of Hudson's Bay: and yet the finest and most aromatic wines of the world are the product of this favored region. Nowhere, indeed, is the fondness for vine cultivation more evident in every grade and class of farmers than in the vine districts bordering on this river and its tributaries. The humblest peasant has his little vineyard. Every accessible spot on the declivities and among the rocks and precipices with an auspicious aspect, is decorated with the favorite plant. Owing to the sloping banks, from Mayence to Bonn, the vineyards on either side of the Rhine are in full view, and in no other country on the globe are they seen to such advantage. Here is Erbach enthroned among vines; here the Rheingau, with its famed Johannisberg seated on

a crescent hill of red soil, with every cranny cultivated that admits of vegetation; here are Mittleheim, Geisenheim, and Dudenheim, the last with its strong fine-bodied wine, the grapes basking in their promontory of rock in the warm summer sun, imbibing its generous heat from dawn to setting; and then again on the other side is old Bingen, celebrated in song, delightful, sober, majestic, adorned on every side by its terraces of vines; the summits of the lofty hills and crags everywhere crowned with feudal relics or monastic remains. At Coblenz the soil first becomes particularly well adapted for the cultivation of the grape, though the right bank of the river is most noted for its wines. The *Rheingau*, the most celebrated of all the wine-growing districts, consists of an area of ten miles in length by four in breadth, which has been known for many centuries for the excellent quality of its produce. The valley of the Rhine, taking from Mayence a western and north-western course, exposes it to the warm south-west winds, which have a very salutary effect on the maturity of the grape. The Riessling, a small white grape, is the one chiefly cultivated here; and although not well adapted for table, has a finer and more aromatic *bouquet*, it is said, than any other grape known. It is in the centre of this district, on a gentle eminence on the right bank of the Rhine, and in plain view from the river, that the celebrated Johannisberg vineyard is situated. This small domain of only forty acres in extent, yields on an average about 9600 gallons of white wine annually, selling in 1859 at public sale, for 60,000 dollars. I am told that four qualities of wine are produced from this vineyard, the best selling for over seven dollars per bottle, or twelve thousand florins (\$6000) per tun. The price of the different qualities varies from \$1.50 to \$7 per bottle. It is sometimes sold, however, by the cask, especially in bad years. The cellars or vaults are very extensive, but it is difficult to gain admittance to them. There are no gardens attached to the Chateau, as the ground is too valuable, nor are there any trees, except on the north side of the house, where is a sort of wilderness of limited extent. The best wine, I am informed, is the product of vines growing close under the Chateau, and, indeed, partly over the cellars. The rare excellence of the wines of this district is generally accounted for from the advantageous exposure to the direct rays of the sun, and the peculiar qualities of the slaty soil, which retains the heat of the sun's rays, so necessary for bringing the grape to maturity. This is proved by the fact already stated, that the best wines are confined to the north bank of the river, the valley being completely sheltered from north and east winds by the intervening barrier of mountains. A good deal, however, is evidently owing to the careful management of the vines, and the great care bestowed on the vintage. The grapes, for instance, are allowed to remain on the vines as long as they can hold together, and the vintage never takes place till the grapes are more than perfectly mature. The vineyard is divided into small compartments, the produce of each of which is put into separate casks, and even in the best years there is a difference in

the value of different casks. In bad years the wine never goes into the cellars, but sells at once for what it will fetch. The best of the Rhine wines, after being fermented in casks, are repeatedly racked, and then suffered to remain for years in large reservoirs to acquire perfection by time. These huge casks contain 350 tuns. The Germans have always held that wines mellow best in large vessels, hence the celebrated Heidelberg tun, 31 feet long by 21 high, and holding 600 hogsheads. Hence, also, the enormous tuns of Tübingen, Gruningen, and Konigstein, the last of which contains 3709 hogsheads. All these tuns were formerly kept carefully filled. Some of these I have examined, but could not ascertain that they had been filled for many years past. I have mentioned the Riessling grape, but there are also the Klimberger, the Traminer, and the small Orleans variety, all of which are cultivated in the Rheingau and produce excellent wines. The laborers are strictly forbidden to eat any grapes under the penalty of the loss of future employment, and during the vintage they are allowed double wages. The common wine-press is used. The gathering of the grapes is not completed at once, none but the ripest being picked, so that there are as many as three or four distinct pickings. Dry and fine weather is deemed indispensable for the vintage. For the choicest wines the ripest of the best kinds of grapes, grown in the most favorable situations, are cut off with small scissors, and after lying twenty-four hours are pressed separate from the rest.

The Rheingau is divided into the Upper and Lower Cantons, relating to the position of the vineyards near the summits of the hills, or on the margin of the river. The high grounds produce the strongest wines, while that of the lower ground has an earthy taste—the intermediate being considered the best and most wholesome, though much depends on the season. The Johannisberg and Steinberg rank first among the Rhine wines, and are on an equal footing as regards flavor and bouquet. Next to these follow Rudesheim, Markobrunner, and Rothesberg, all of which possess much body and aroma. The Hockheim grows on the banks of the Maine near Frankfort, and ranks with the best of the second class Rhine wines. Of the inferior wines the Erbach and Hattenheim are the best. But the lighter wines are apt to be hard and rather acid as table wines. The Laubenheim and Neirstein, from the Palatinate above Mayence, and the delicately-flavored Moselle, are much preferred to them as table wines in Germany. The best red wine is the Asmanshausen, produced from vines originally brought from Burgundy. But the vine chiefly cultivated on the Rhine is the Riessling. All German wines have been called *Hock*, but this name is derived from and properly belongs to that produced at Hockheim near Frankfort, above mentioned, which stands in the midst of vineyards, on elevated ground, and exposed to the full blaze of the sun. I found that the vineyard which produces the Hockheimer of the first growth is only about eight acres in extent, well sheltered from the northerly winds, on the side of a hill behind the deanery. But the average summer heat here is not sufficiently great, oftener

than once in five or six years, to perfect a vintage of superior quality. The relative proportions of the different elements which enter into the composition of grape-juice, as sugar, albumen, gluten, pectine, gum, coloring matter, tannin, volatile oil, bitartrate of potash, etc., are so modified by the nature of the vine, quality of soil, and especially the heat of the climate, that there are few crops so uncertain as that of the vine, to say nothing of the *oïnium* or other diseases which have of late years attacked this plant. The present season promises to be one of the most productive ever known, the vines everywhere being loaded with fruit. It is a well known fact in this region that wines of equal flavor and equal quality are rarely produced in two consecutive years, while in districts like this, on the very verge of the protective limits of the vine, its produce is still more variable and inconstant. I find the limits to the culture of the vine in Europe are generally fixed where the mean temperature is from 50° to 52° F., and I believe no drinkable wine can be produced under a colder climate. But the isothermal line of 50° which passes through Belgium in lat. 51°, in our country passes near Boston in lat. 42° 30'.

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COBLENZ ON THE RHINE, Sept. 21, 1852.

In Europe, the favorite climate of the vine is between latitude 36° and 48°, that is between the isothermal lines of 62° and 47° 50', provided the winter line is not below 33°, nor the summer under 66 or 68°. Such is the case in Europe to lat. 50°, and in the United States to lat. 40°, but on our Pacific coast the requisite temperature for maturing the grape is found as high as Fort Vancouver (in the latitude of Montreal), where the fig, citron, orange, lemon, pomegranate, and cotton plant, ought also to flourish. I believe it has been ascertained by Humboldt that the mean heat of the edge of vegetation of the vine must be at least 59° F., and that of the summer from 65 to 67°, and that any country which has not these climatic conditions cannot produce fully ripened grapes or drinkable wine. It is a singular fact that on the table lands of South America where the mean temperature is from 62 to 66°, although the vine may grow and flourish, the grape does not mature, because the temperature is too low and nearly uniform. In no equatorial country can good wine be made where the constant temperature is not, at least, 68° F. The most remarkable vintages of the Rhine wines, I am informed, were in the years 1811 (when the celebrated "Comet" wine was produced), 1822, 1834, and 1857, and the mean temperature of these summers was 68° F. One of the poorest years for wine was in 1833, when the mean temperature of the summer was only 63° F. We shall, however, err, if we suppose that the strongest wine always corresponds with the hottest summer; for, in addition to this, it appears that a mild autumn is an essential condition to the ripening of the

grapes. Thus in 1834 and 1811, which were remarkable over Europe for the quantity and excellence of their wines, the mean temperature of September and October was as high as 62° F., while the mean temperature of the same months in 1833 and other bad years was only about 50° F. I make these remarks to show how uncertain the cultivation of the grape must be in our northern and perhaps mean and middle States, where the conditions for maturing the fruit must often be absent, but in southern Ohio, Illinois, and our southern and southwestern States generally, as well as on the Pacific coast, all the necessary climatic conditions will be found for perfectly maturing the grape, and the production of excellent wines.

The chief defects of wine are wanting strength and being too acid. Both are owing to want of maturity in the grapes. There is an excess of cream of tartar and free vegetable acids, which disappear as the grape fully ripens, and are replaced by sugar, and this deficiency of sugar in the must is supplied both in Germany and France by adding a quantity of artificial grape sugar, prepared from starch. The quantity of acid is small in warm climates where the grape fully ripens; here the sugar greatly predominates, so that the *ferment* or azotized principle of the must is insufficient for complete fermentation, when we have sweet wines, but if the ferment be sufficient we have strong alcoholic wines, as those of Madeira. These principles are well understood here on the Rhine, where it is a common practice to add sugar and water to the grape juice in process of fermentation in order to quadruple the quantity without deteriorating the quality of the article produced. The grapes are at first subjected to gentle pressure only, by which a portion of the juice is extracted; then sugar and water are abundantly added to the husks, in order to get the largest possible quantity of wine out of a given quantity of grapes. But the quality is, of course, greatly deteriorated. I found this practice almost universal in the wine districts of France, and was informed that the *vin ordinaire*, and the wine generally met with in the cabarets, was produced in this manner. It is well known that the best Rhine and Moselle wines rarely have any brandy added to them, and that they will keep for a century at least without any alcoholic addition, and yet their alcoholic strength, according to the test in use at the custom house in London, seldom exceeds 18 per cent. upon the common, and 21 per cent. upon the best descriptions, and yet when going through the wine vaults at the London docks, I was told by one of the largest dealers, that he uniformly added 33 per cent. of brandy to his sherry wines, to adapt them to the taste of the English wine drinkers, who seem to relish only the strong fiery wines.

To show not less the capacity of the human stomach, and the toleration of the pure Rhine wines, I may mention that I have known two gentlemen drink, at a single sitting of six hours, twelve bottles of the best quality, without any apparent excitement or ill-effect whatever. Port wine used in England is known to be re-

inforced before it leaves Portugal by one-fifth of strong brandy, besides what is added to it in the London docks; which we may presume to be equal to that added to sherry, viz: 33 per cent.! I am glad, however, to observe that the lighter wines of France and Germany are becoming much more extensively used than they were when I was last in England, twelve years ago; so that the consumption of French wines has now reached 25 per cent., and the Rhenish wine over 3 per cent. of the whole amount imported. Still, most of the old English wine-drinkers cling to the use of the strong alcoholic wines, to which they have been so long accustomed; and there is little reason to expect that the *pure juice of the grape* will speedily, if ever, supplant the national drink of the English, viz: *malt liquors*. I think the German wines possess a distinct character from all other wines; being generous (as it is called), drier than the French, finely flavored, and enduring age beyond any other wines whatever. Of late years also they have greatly improved in quality by the great attention paid to their growth, and better management of the vintage. Wine-making has become more of an art or rather science, and the best chemists of the country, like Liebig, Boussingault, etc., have contributed their efforts to aid in its advancement; so that there are great emulation and competition in the different wine districts, and the wines show a corresponding excellence. For instance, there is now a great rivalry between the two vineyards of Johannesberg and Steinberg, so that some years the produce of the latter brings a higher price than that of the former. Five dollars per bottle at the cellars is not an unusual price for it. So the Rudesheimerberg, the Steinberger, and the Graefenberg, are held in nearly equal estimation by wine connoisseurs; and the vineyards of Roth, Koningsbach, and Marcobrunn, do not lag far behind. The oldest wine I have met with is of the vintage of 1748, which is still offered to purchasers; though the wines of 1783, yet on sale, bear the highest character of any of the wines of the last century. The opinion, that the nature of any particular wine depends on or is improved by its great age, is not often entertained in this region. The wine is accordingly not kept out of the market so long as formerly. I am sure I cannot explain why it is, that, while much stronger southern wines suffer from age after a certain number of years, even in bottle, these Rhine wines, containing far less spirit, undergo no deterioration by age, but are, if anything, improved; so that the Steinwein of 1748 brought, in 1832, 350 dollars for thirty gallons. I found it a very common opinion in England that the Rhine and Moselle wines are more acid than the white wines of France; but I believe it to be a mistake, for the French sulphur their wine casks to prevent the acetous fermentation, which is not practised, as it is not necessary, here; and inasmuch as acids are supposed to generate gout, English physicians forbid their gouty physicians to drink the Rhenish wines, which is certainly a mistake, as the gout is a disease rarely, if ever, known on the banks of the Rhine, where no other wine scarcely is drunk. This is also

the testimony of the physicians of Mayence, who say that the Rhine wines are very salutary, and even medicinal, containing less acid than any others, and are never saturated with brandy, as the French white wines are. Were I to recommend any foreign wine, it would be the highly flavored Moselle, which is now becoming highly fashionable at the first tables in London, and which, when iced, constitutes a most grateful and not unwholesome drink in summer. It is also a cheap wine, costing at Coblenz or Mayence, less than one dollar and a half per imperial gallon. It contains, I believe, more *œnanthic ether* (that volatile principle which imparts that smell and taste which distinguish wines from all other fermented liquids) than any other wine; though the French wines have it in a marked degree, particularly those from the Orleans grape. Tropical wines, it is well known, have no bouquet whatever.

In regard to *sparkling wines*, I am told that they began first to be manufactured in Germany about forty years ago from the inferior Neckar grape, and that the process has been continued from that day to the present with increasing success; so that at this time they compete to a considerable extent with genuine Champagne. There are now manufactories of this wine at Hockheim, Mayence, and Coblenz. I have good reason to know that large quantities of inferior wine, which would not readily find a sale in its unsophisticated state, are thus got rid of, the sweetness and effervescence, as in the case of our Champagne made of Newark cider, concealing and masking the real inferiority of the wine. It is maintained here, by dealers in the article at least, that if the best kind of grapes are selected, and the same process pursued as in Champagne, a most excellent wine is the result, and quite equal, every way, to the best Champagne, and greatly superior to most that goes under that name. But the grapes, I believe, are taken from a common growth, and the effervescence produced by the carbonic acid gas in the process of fermentation. The best judges, however, say, that the experiment is a failure; that, although the effervescence of a Champagne wine may be thus obtained, yet the delicious flavor which characterizes that wine will be always wanting, as that flavor is derived from the soil, and can be supplied by no art. I know that large quantities of the lowest class of German wines are imported into France for the purpose of being converted into Champagne, and that fictitious sparkling Moselle is now extensively manufactured in France, labels being used bearing the names of patented German wines. The truth is, that Champagne wines, so called, are made in Germany, merely to get rid of the poorer and unsalable classes of wines, and this is confirmed by the little estimation in which they are held in the country of their manufacture; for we cannot suppose it to be fashion or prejudice which causes a preference to be given to French Champagne. Else, why are these sparkling wines designated by French names, and why employ the labels, brands, and mode of packing in vogue among the French manufacturers? If the wine could stand on its own merits,

these impositions, I take it, would not be necessary. These wines cost here about seventy-five to ninety cents per bottle, while the best French Champagne (Cliquot or Moet brand) costs about double the price. In 1861 the sale of sparkling Hock and Moselle was estimated at about one million of bottles, which is about one-tenth of the sale of French Champagne. But this is too extensive a subject for a single letter.—*Amer. Med. Times.*

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*Three Cases of Strangulated Hernia, in which the Operation was performed without opening the Sac.* By HENRY B. SANDS, M. D., Surgeon to St. Luke's Hospital.

CASE I.—*Strangulated Femoral Hernia.—Operation without opening the Sac.—Recovery.*—On October 11th, 1862, I met Dr. S. S. Purple, in consultation, to see a lady residing in this city, who had suffered with the usual symptoms of strangulated hernia for about thirty hours. The patient was 25 years of age, married, and in good general health. She noticed, a little more than two years ago, a small swelling in her right groin, concerning the origin of which she could give no explanation. At first occasioning no inconvenience, it was soon observed that at times the swelling would suddenly enlarge, the increase in size being accompanied by pain and vomiting, and that after a longer or shorter interval the pain and vomiting would disappear—their disappearance being coincident with the subsidence of the tumor. She had sought surgical aid but once before, when Dr. Purple succeeded in returning the protrusion by the employment of the taxis. The present attack began on the day previous to my visit, shortly after the patient had risen from bed. Whilst dressing herself she was taken with pain, and soon became aware that the tumor had descended. At the same time, according to her statement, she had a tolerably free evacuation from the bowels. The pain then grew more severe, being most intense in the neighborhood of the umbilicus, and vomiting of a persistent character soon followed. These symptoms continued, without amelioration, up to the time I first saw her. The attacks of vomiting were then taking place at intervals of from fifteen minutes to half an hour. The matters vomited were greenish and watery, but not stercoaceous. Pulse 90; skin warm and moist; countenance pale, and expressive of suffering. A tumor, about as large as a hen's egg, was situated in the right groin, immediately over Poupart's ligament. It was tense, elastic, resonant on percussion, and not very painful. It lay over the inner half of Poupart's ligament, was freely movable above and externally, but firmly fixed at the situation of the femoral ring. Dr. Purple had already made a careful and patient attempt at reduction, but without the use of an anæsthetic. It was now decided to render the patient insensible, and then to act as circumstances might require. Ether having been administered, the taxis was

again employed, but without success, and I accordingly proceeded to relieve the stricture by means of the knife. I made a single, straight incision, about two inches long, on the inner side of the tumor, and soon arrived at the level of the sac, which was in good condition, and evidently without any sign of gangrene. Leaving the sac unopened, the forefinger of the left hand was passed with care up to the situation of the femoral ring, into which I introduced a hernia knife, and, directing the edge of the instrument, in the usual manner, upwards and inwards, made a limited division of tightly constricting tendinous fibres. An assistant having then elevated the patient's pelvis by raising the lower extremities (an expedient which, in my opinion, greatly facilitates the reduction of hernial tumors), I succeeded, by very slight manipulation, in pushing back a knuckle of protruded intestine, which returned to the abdominal cavity with a gurgling noise. The sac then felt as though it contained a small piece of omentum, adherent to its inner surface, but it was deemed best to leave this undisturbed, there being no reasonable doubt that all strangulation was removed. There was hardly any bleeding during the operation, which was done with comparative ease, and without any such disturbance of the tissues as usually happens in the ordinary procedure where the sac is laid open. The wound was closed with silver sutures, and dressed with adhesive straps, a campress of lint, and a spica bandage.

Oct. 14th.—Every thing has gone on well since the operation. The vomiting and pain ceased almost immediately, and small doses of opium produced quiet, refreshing sleep. Yesterday Dr. Purple prescribed a tablespoonful of castor oil, which in a few hours caused a healthy-looking fecal evacuation. Wound healing well.

Oct. 18th.—Patient well. The wound has healed completely by adhesion, and the dressings have all been removed.

CASE II.—*Strangulated Femoral Hernia.—Operation without opening the Sac.—Recovery, with Fecal Fistula.*—On February 15th, 1863, I saw Mrs. J\_\_\_\_\_, of this city, in consultation with Drs. Van Antwerp and Vosburgh. The patient was about 60 years of age, and had for many years been in feeble health. She stated that she had had a rupture in the left groin during the past nine years, which was probably caused by overwork, and for which she had never worn a truss. It had at times given her a good deal of trouble, by the pain and vomiting which accompanied its descent; she was almost always able, however, to effect a reduction without assistance, although sometimes four or five hours would elapse before her efforts proved successful. Soon after getting out of bed on the 13th inst. she felt the tumor descend, and was seized with the desire to go to stool, where she had two evacuations from the bowels. Pain and vomiting then set in, and continued through the day, the whole of which she spent in forcible but fruitless attempts to replace the protruding organs. On the 14th, the symptoms becoming more severe, she sent for her attending physician, Dr. Van Antwerp, who, with the help of Dr. Vosburgh, made sev-

eral unsuccessful attempts at reduction. At the time of my visit, on the 15th inst., her condition was as follows: Pulse 104, small and feeble; skin cool, and covered with moisture; abdomen somewhat tense, but not painful, except in the neighborhood of the tumor; matters vomited thin and yellowish, but without stercoraceous odor. The hernia was situated over Poupart's ligament, covering its inner two-thirds; it was hemispherical in shape, and not distinctly defined, the skin and subcutaneous tissues being inflamed and oedematous. Pressure gave acute pain, but caused no change in its position, which was fixed and immovable. The patient having been put under the influence of ether, I made an incision, as in the former case, on the inner side of the tumor, and found the tissues between the integument and the sac considerably thickened, and matted together into a mass, in which the so-called "coverings" of the sac were not distinguishable. The parts were also unusually vascular, several vessels requiring the ligature before the sac was exposed. This having been accomplished, and the sac appearing to be healthy, I determined, if possible, to leave it intact, and to relieve the stricture by external division. I found the femoral ring tolerably tight, and divided Gimbernat's ligament with a hernia knife, after which I made an attempt at reduction, and failed. I then drew the sac downwards, so as to get a view of its neck, across which several short, glistening, fibrous bands could be seen running. These I cut through carefully, being cautious not to open the sac, and as soon as this had been done I was able to return the intestine, which slipped up with a gurgling noise. A small portion of omentum remained unreduced, and could be felt adherent to the sac; this was left without further interference, and the wound in the integument brought together with sutures and adhesive strap, over which were applied a compress and spica bandage. It is worthy of remark that, in cutting the stricture, the obturator artery, which had an abnormal origin, and ran over the neck of the sac, was accidentally divided by the hernia knife; it was easily secured by the ligature, however, after having drawn up the tendinous margin of the femoral ring, so as to expose the divided ends, both of which had to be tied before the hemorrhage was controlled. After the operation the patient rallied slowly, and during the first week the progress of the case seemed favorable; there were no signs of peritonitis; the bowels moved on the sixth day, and the greater part of the wound healed by the first intention. On the ninth day, however, a small quantity of yellowish fluid made its appearance at the wound, having a fecal odor, and on the following day this grew more abundant, its character being unmistakable. An attempt was made to limit the discharge by making firm pressure over the wound, but this was not well borne, and for some days a very considerable quantity of feces passed out at the artificial opening. Meanwhile the bowels continued to act with almost natural regularity, and the patient's general condition, though uncomfortable, did not appear to be critical. The discharge began to diminish rapidly about three weeks after the operation,

and is now so small as to be scarcely perceived, the opening having been reduced to a narrow fistulous track.

CASE III.—*Strangulated Inguinal Hernia, complicated with an Undescended Testis.*—*Operation without opening the Sac.*—*Recovery.*—In the afternoon of Wednesday, February 25, 1863, I visited Thomas —, at Rahway, New Jersey, where I met Drs. Abernethy and Drake, of Rahway, and Mr. Marsh, the truss maker, of New York. The patient was a slender, delicate-looking lad, 16 years of age. He had for several years been subject to a small hernia on the right side, which, however, had never given him any trouble until the Sunday previous, when, after a fall, the swelling became suddenly larger, and did not disappear as usual. The ordinary symptoms, pain, vomiting, and constipation, followed, and on Monday he was seen by his attending physician, Dr. Abernethy, who administered chloroform, and with the assistance of Mr. Marsh tried to reduce the tumor. Failing in this, and the symptoms not being very urgent, various external remedies were applied, and active interference delayed until Wednesday, when, signs of commencing peritonitis showing themselves in addition to the other symptoms, it was thought best to seek relief by surgical means. At the time of my visit he had the usual aspect of a person suffering from strangulated hernia, but was in a tolerably good condition, and without any signs of prostration. The abdomen was somewhat tense and tympanitic, and there was pain, referred chiefly to the region of the umbilicus. The hernial swelling, situated on the right side, was about as large as a lemon, and evidently inguinal; it was quite tense, elastic, and resonant on percussion. On the same side it was noticed that the testicle had not descended into the scrotal cavity, and upon examining the hernial tumor, it was found that pressure on its posterior part caused the sickening pain peculiar to that organ, the outline of which, however, could neither be seen nor felt. Ether having been administered, I operated in the following manner: A single straight incision was carried over the middle of the tumor, extending from just above its neck downwards for about three inches. Having, by careful dissection, exposed the tendon of the external oblique muscle, I cut through it so as to lay open the whole length of the inguinal canal, this step of the operation evidently affording great relief to the constriction. Failing to effect reduction by this means, however, I drew down the sac so as to expose its neck, when several circular fibrous bands came into view, consisting apparently of thickened sub-serous cellular tissue. The division of these with a scalpel gave complete relief to the strangulation, the gentlest manipulation sufficing to return the contents of the sac, behind which, as it lay loose and flabby in the wound, an oval body could be felt, evidently the undescended testis, which had been arrested in the inguinal canal. I left it where I found it, and closed the wound in the usual manner. I have not seen the patient since the operation, but have learned from his physician that it was entirely successful in reliev-

ing the symptoms, and that he recovered rapidly, without any signs of peritonitis.

*Remarks.*—My object in detailing the above cases is to bring before the notice of the profession an operation which, though well known in Europe, and almost exclusively practiced by several English surgeons of eminence, has received little if any attention on the part of the profession in this country. So far as I have been able to inquire, our American periodicals do not contain a single recorded case in which this operation has been performed. The operation for the relief of strangulated hernia without opening the sac is of French origin, having been proposed by Petit in 1718. The proposal met with little favor, however, until 1833, when the procedure was revived by Aston Key, and subsequently advocated by Luke, Gay, Bryant, and several other English surgeons. The advantages claimed for the operation are, its simplicity, and comparative safety, the patient being spared the danger of peritonitis caused by the opening of the sac and the exposure of its contents. In regard to the first point, I am satisfied that it is much more simple than the ordinary operation, and that it involves much less disturbance of the tissues; it also appears to me to be exceedingly easy of execution, especially in cases of femoral hernia. As regards the comparative safety of the operation, this lies in the fact that the sac is left unopened. That the opening of the sac, together with the exposure and handling of its contents, is a circumstance which favors the occurrence of peritonitis, and which tends to increase the latter when already existing, will, I think, hardly be denied by those who have seen or treated many cases requiring operation. The most important statistics bearing on the comparative safety of the two methods are given by Mr. Luke, and the results presented are the more valuable, as all the cases occurred in Mr. Luke's own practice. Of 84 cases requiring an operation, the sac was opened in 25; in 59 it was left unopened. Of the former, in which the sac was opened, 8 died, or 32 per cent.; of the latter 7 died, hardly 12 per cent. The cases I have narrated are too few in number to warrant any general conclusions, yet I cannot help contrasting them with other cases where I operated by the usual method, and in which peritonitis of an alarming character almost immediately followed. There have been two principal objections urged against Petit's operation—1st, the danger of returning into the abdomen a portion of intestine strangulated by the contents of the sac; and 2d, that of returning a band which is either gangrenous or ruptured. In regard to the first of these dangers, it may be remarked that the existence of internal strangulation is very rare, and that where it does exist there are usually adhesions between the sac and its contents, which compel the opening of the former in order to effect reduction. The same fact may be stated with reference to the danger of returning the intestine in a state of gangrene, this condition generally being preceded by such a degree of inflammatory action as is sufficient to produce an adhesion of the contents of the neck of the sac. Moreover,

some opinion may be formed as to the existence or non-existence of mortification by attending to the general symptoms, and by noticing the length of time that has elapsed since the strangulation began; also, during the operation, the presence of gangrene is often announced by change in the appearance of the sac, even before this is laid open. But that the risk of returning a gangrenous intestine, or one doomed to gangrene, really does exist, is proved by the second case I have related; and yet the result of this case is especially interesting, as showing that such a procedure is not necessarily fatal, and that leaving the sac unopened does not prevent the establishment of an artificial anus. Some very instructive facts bearing on this question are given by Mr. Bryant, in Guy's Hospital Reports, 3d series, vol. 2, where an analysis is presented of 126 fatal cases of hernia. Mr. Bryant shows conclusively that the danger of fecal extravasation, after the return of a mortified intestine into the abdominal cavity, has been very much exaggerated, this having occurred in one only out of six cases, and then at a remote period, after several weeks of favorable progress. In the same paper it is also shown that, where the intestine is gangrenous, a fatal result follows much earlier when it is left in the sac and laid open than when it is returned to the sac's mouth, and the establishment of an artificial anus left to nature. The reason why fecal extravasation does not more often occur is doubtless to be found in the fact that, peristaltic action being arrested in the mortified intestine, it remains stationary at the mouth of the sac, so that before it gives way the inflammatory plastic exudation has furnished a barrier, which defends the cavity of the peritoneum against the entrance of feces. In conclusion, I may state that, in my opinion, there are few cases in which the operation without opening the sac should not be tried before resorting to the ordinary procedure; and that, if performed early, it is, as some author has already observed, little more than the employment of the taxis, with the addition of a superficial incision.—*American Medical Times.*

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### *Abortion—Its Prevalence, and the Duties of the Profession.*

The appearance in the courts of two abortionists within a short period, to answer to the charge of homicide, and the introduction of a more stringent Act against this crime into the Legislature of New York, are suggestive of the query—"How far does this evil exist at present in American communities, and what is the popular opinion in regard to this crime?" If viewed in the light of an ancient civilization, the question would seem to have some pertinency, but it appears the most obvious anachronism to canvass the frequency of this crime, and the state of popular opinion in regard to it, in a Christian community. Nevertheless, the fact of the existence of abortion as a common and even increasing evil, appears in our mortality records; and the evidences that the public do not

look upon it as a flagrant crime, and regard its abettors as criminals, become painfully apparent when the horrible developments of murder, by the infamous acts of abortionists, are revealed.

The proportion of still-births to the living gives the only basis on which can be calculated the number of cases of abortion. These figures are, however, but approximative, for very many cases of still-birth are not produced abortions, while a vast number obviously escape detection and registration. Taking our mortality reports with all due allowance for these discrepancies, the record is still sufficiently humiliating. From these, it appears, that since the first registry in New York, in 1805, the proportionate and actual increase of still-births has been alarmingly rapid. In 1805, the ratio of foetal deaths to the population was 1 to 1,633, but in 1849, 1 to 340. In 1856, the records show that 1 in every 11 is still-born in this city, while the reports of European countries, even allowing for criminal abortions, give the proportion of still-births at 1 in 15. Accurate records of the best practitioners give, as the ratio of premature births, or non-viable foetuses, to the whole number of births, which includes, of course, only abortions from natural or accidental causes, 1 to 78; but in New York the ratio of the same births to the whole number is 1 to 40. The ratio of premature still-births at full time in this city, in 1846, was 1 in 10, and in 1856, ten years later, it had increased to 1 in 4. From these facts it is apparent, not only that produced abortions are frequent in this community, but that they are rapidly increasing. In seven years, from 1850 to 1857, the still-births doubled, and we have good evidence that since that period the proportion has rapidly increased.

New York may justly be taken as an index of this country. It certainly does not give an exaggerated representation. The registration returns of the State of Massachusetts show that the comparative frequency of abortions in that State is thirteen times as great as in New York city. Allowing that some discrepancy in the returns must exist, they still prove the general prevalence of this crime in one of the most intelligent and moral communities of the United States. Whoever examines the advertising columns of country papers, and marks the large number of nostrums which in various and cunning phrases are recommended as certain to effect abortion, cannot doubt the wide and almost universal prevalence of this crime. It is painful to believe that the public conscience is not alive to the moral turpitude of abortion. And yet we have frequent evidence that it not only is not shocked at the criminality of the act, but that it even regards with indifference the revelations of the scenes of cruelty, debasement, and utter loss of every virtuous impulse which the courts often reveal to the public gaze. The horrible tale of seduction, abandonment, suffering and death brought to light in the case of Miss Anderson, passed without a comment. On the contrary, it is to be feared that it was read by not a few with as much interest and as little profit as the idle tales of the magazines. It cannot be denied that in every grade of society lax opinions of the criminality of procured abortion exist. It is not

alone the ignorant and vicious that consider it no crime; the religious equally entertain the belief that abortions may be practiced without a shadow of guilt. Every physician must have been approached by persons of upright motives with solicitations to prescribe remedies or employ means which would terminate an early pregnancy. There cannot be a doubt that the public mind to-day is inclined to regard abortion as a crime only under certain circumstances. The life that is sacrificed is regarded as unreal, and the convenience or comfort of the parents is alone consulted.

Who is responsible for the tone of the public sentiment on the question of the criminality of abortion? We believe it rests entirely with the medical profession. Medical men know well that abortion is the sacrifice of human life; they know well, therefore, the heinousness of the offense. In their daily intercourse with their patients they have the opportunity and the power of inculcating correct opinions of the nature of this crime. Every truly conscientious physician performs this duty faithfully, and often most effectually; the erring and unthinking are instructed, and the lesson makes a profound and lasting impression. But there is a class of physicians who treat this subject with so much indifference that they sanction rather than discountenance the crime. In mild terms they object to employing means to produce abortion, and yet suggest the remedies by which it may be accomplished. The effect is pernicious, as the crime is generally perpetrated. There is still another class of medical men, standing on the boundary between legitimate medicine and quackery, who both advocate and practice abortion. They assume a sanctimonious air and a clerical dress, and under this specious guise practice the black art of abortionists. They are found in the most respectable medical circles, and make their professional associations subserve their base purposes. Judged by the moral code of a Christian civilization, they are the most abandoned criminals in the community, and should be thoroughly purged from the profession. In this city the Academy of Medicine, and in the country the Medical Societies, should inquire, "Have we not abortionists among us?" We do not doubt that they will be found, and that too in startling numbers, especially in large cities.

The whole question of abortion, its religious, social, and professional bearings, should be discussed in all medical societies. The duties of our profession to itself, to religion, to the cause of humanity, should be established on a righteous basis, and every member should be compelled to conform his conduct to this standard.—*American Med. Times.*

*A Clinical Lecture on Typhus and Typhoid Fever.* Delivered at the Fever Wards of Bellevue Hospital. By ALFRED L. LOOMIS, M.D., Physician to the Hospital.

All the patients admitted into the ward, as nearly as could be ascertained, were taken ill suddenly. The majority had a well marked chill at the onset of the disease. Heat of skin was not a prominent symptom in most of the cases. Delirium came on early, and in four instances was very violent; a tendency to stupor was present in most; when coma occurred it was developed suddenly, and, with but two exceptions, was fatal. In all but ten the countenance had a livid hue, and the eyes were suffused. Diarrhoea, pain on pressure of the cœcum, tympanitis, and gurgling, were present in only six, in all of which the rose spots were present. Subsultus tendinum was not marked in more than half of the cases, and when present was slight, occurring as frequently in those who recovered as in those who died. Epistaxis was noticed only in those who had the rose-colored rash. Hæmorrhage from the bowels occurred in but one case, which was fatal on the sixteenth day. In thirty-two cases a petechial eruption was apparent over the whole surface by the seventh day; at its first appearance it was bright, partially or completely disappearing under slight pressure; in two days it became dark and was unaltered by pressure; it was visible in each case until convalescence was established; one death occurred; in two there was no eruption. In the remaining case a few spots only appeared on the chest and abdomen of a bright rose color, readily disappearing under slight pressure; each spot remaining only two or three days and then followed by successive crops of eruptions. The question now very naturally arises—Have we had two distinct fevers with two distinct eruptions, or only one fever with two varieties of eruption? The profession is divided on this subject. From the closer observation you have given the cases, as they have occurred the past two months, you are, I think, perfectly prepared not only to recognize two distinct eruptions, but that in patients lying side by side having the eruptions, there has been a clear and unmistakable difference in the symptoms, mode of access, march, duration, and convalescence, as well as in the effect of stimuli; and that following these eruptions to the dead-house, the lesions have differed as widely as the eruptions. True, unless the “eruption makes the distinction, there is no sufficiently constant distinction during life;” but the same may be said of the exanthemata. I will take a step further; in tracing out the origin of these cases, not in a single instance have I found typhus contagious, followed by typhoid symptoms, but always by typhus and vice versa. On the eruption then, and that only, are we to rely for a certain diagnosis. When it has not been present, or not characteristic, I have delayed the diagnosis; but when the petechial rash of typhus has been

copious (as in thirty-two of the cases), I have not hesitated to call it typhus; and when, on the other hand, the rose-spots of typhoid have been present (as in six cases), I have been equally as certain of typhoid. There are those who are sceptical on this point; yet the marked contrast between the measly rash of typhus covering the whole surface, and the isolated rose-spots of typhoid appearing by twos and threes from day to day on the abdomen and thorax, ought (it seems to me) to leave no doubt. In three of those who died (on whom autopsies were obtained) the kidneys presented unmistakable evidences of fatty degeneration; in each of these cases death had been preceded by sudden coma, the patients apparently doing well until the coma occurred. A trace of albumen was found in the urine of two. Care in future examinations will, I hope, determine how constant coma and Bright's kidney occur together in typhus. No microscopic examination of the urine was made in these cases.

There was but one death among those under twenty years of age, while among those who had reached adult life about one half died; in fact, only five adults, who were very ill, recovered.

In all the cases stimulants were administered more or less freely; in fact stimuli and nourishment have constituted almost the entire treatment. In the majority it was commenced early, so early in one or two cases as the second day. In many of the cases large quantities have been given (as 60  $\frac{3}{4}$  per day). The guide in its administration has been the pulse; when it became frequent and feeble stimulants were increased in sufficient quantities to control it without regard to the amount administered. With but one exception, where the pulse has not responded to the stimuli, the case has terminated fatally. In those cases where the rose-spots were present, the average amount of stimulus required has been much less than in others, and was commenced later in the disease. The younger the patient the more sure and prompt was the response to the stimulus. Its use was continued in all cases of recovery until convalescence was fully established.

I cannot close without making special mention of one who has served me so faithfully as acting House-Physician, I refer to the late Henry W. Cook, M.D.

When, one year since, he passed his examination (than whom none stood higher), and entered Bellevue Hospital, he bade fair for a life of usefulness and position. A thorough student, striving to grasp all knowledge within his reach, earnest and assiduous in his labors, always at his post, never having left the hospital even for a day, since his admission. Although at the commencement of his service in the fever-ward he expressed some fears lest he might contract the disease, those fears never prevented him from faithfully, and more than faithfully, performing the duties devolving upon him. I add, without comment, the record of his illness, and of the post-mortem appearances, as made by Dr. T. K. Chandler, house-physician.

Henry W. Cook, aged 26 years, well developed and strong, was

taken with chills on the 4th of March. He had no predisposition to disease, save that he had been closely confined to the hospital for many months, and had spent considerable time in the feverward. After having chills he continued feverish and uncomfortable for several days, and expressed fears that he was going to have typhus fever. During this time his bowels were constipated, his pulse was somewhat accelerated, and he complained of pain in his head, which he thought to be neuralgia, and he had a tooth extracted, believing that the pain proceeded from that. On the sixth day, as he felt no better, but rather worse, he kept his bed; and on the seventh day, a rather sparse eruption appeared on his abdomen, the spots being bright, and disappeared fully under pressure. This eruption extended in two days to the arms and legs, and after this time it did not disappear under pressure; it also became of a darker color: it was not papular in its character. At this time and subsequently, the tongue was considerably furred and the pulse more frequent until the tenth day of the disease (dating from the commencement of the chills, the pulse ranged between 90 and 95 beats per minute); but on the tenth day it rose to 118 beats, and it fluctuated between 108 and 118 from that time till the fourteenth day. On the thirteenth day it suddenly became very weak, and the patient seemed to be much prostrated. On this day he had five diarrhoeal passages, fluid, dark in color, and very offensive; previous to this he had had no spontaneous passages, but had required injections daily. On the fourteenth day he seemed much better; there was no delirium, of which there had been a little during the nights immediately preceding. The pulse was full and regular, and of about 108 beats per minute. The countenance was bright and cheerful, and the tongue appeared cleaner than before; it had never been dark or dry. The patient sat up in bed and shaved himself in the morning, and during the day he wrote two prescriptions for himself, which evinced perfect steadiness of hand. His manner was cheerful and natural, and when asked whether he would like to have his friends apprised of his illness, he said he would not at present, but that in a few days, when he should be strong enough, he would like to have them come and take him home. Altogether his appearance was so favorable that his attending physician and the resident staff of the hospital considered him out of danger. At ten o'clock P. M. he was in the same favorable condition. He took his hourly quantity of brandy (3 iss) and his beef-tea as usual. His pulse at this time was about 82 beats per minute and full. He seemed disposed to sleep. From this time until two o'clock A. M. he refused to take any nourishment, and only a part, probably about half, his usual quantity of brandy. At this time his pulse was 100, and rather feeble. He was at once required to take his allowance of brandy and of nourishment, and from this time until morning he took them regularly. At seven o'clock his pulse was about 120 beats per minute, and quite feeble, and the brandy and nourishment were increased to double the quantity he had been taking. He was perfectly rational at this

time, and frequently complained of great weakness. About nine o'clock he suddenly sank into a profound coma, from which he never awoke. During the first hour he was in this condition his pulse sank to 70 beats per minute, but after that it rose to 130, 140, and so high as 150 during the last hours of his life. The number of respirations, which at first was entirely out of proportion to the heart's pulsations, gradually increased to 35, and even 40, during the last hours of his life. During this period, the expirations were occasionally puffing in character. The pupils, during the early stage of coma, dilated, but at a later period they were moderately contracted, and but slightly sensible to the influence of light. Swallowing was very difficult throughout this period, and during the last few hours impossible. Soon after the patient entered the condition of coma, a blister was applied to the back of the neck, and a large mustard plaster to the abdomen. At a little later period a turpentine stupe was applied to the chest, but none of these measures seemed to produce the slightest effect on the patient; and from the time he became comatose he never moved a limb, nor opened his eyes, nor gave any signs of consciousness. At the order of the attending physician, turpentine was given in drachm doses by the mouth, but it excited so much irritation of the larynx that we were obliged to desist from giving it, except per rectum, in which manner brandy, carb. am., and nourishment were also freely given, but to no purpose. The bronchial tubes gradually became obstructed, the respiration more frequent, and the heart more feeble, until ten minutes past nine o'clock P. M., when the patient breathed his last.

An examination of the body was made by Drs. Paine and Sears nineteen hours after death, Dr. Loomis being present, together with many of the house staff.

*Sectio Cadaveris.*—Nineteen hours after death. Body still warm; rigor mortis moderately well marked; whole posterior aspect of body echymosed from post-mortem capillary stains. The body appeared to be well nourished, having undergone no emaciation; abdomen not at all tympanitic. Upon removal of the calvarium marks of venous congestion were presented. Raising the dura mater the arachnoid membrane was found lifted up from the surface of the brain by sub-arachnoid effusion; the convolutions were sharply defined. The arachnoid was intensely congested. The brain was somewhat harder than natural, and its vessels intensely congested. Opening into the ventricles (lateral) no effusion was found. Opening the abdomen the intestines appeared, presenting a perfectly healthy appearance, with the exception of three small spots of congestion. Opening the intestines, three of the Peyerian patches were seen imbedded in the three congested spots; they were moderately enlarged. Nothing abnormal, however, was seen in the patch at the ileo-coecal valve. The right kidney was considerably enlarged and intensely congested; upon section it had the appearance at one end of an apoplectic clot; blood exuded from it freely; there was no disproportion between the corti-

cal and medullary portions. Left kidney not so much enlarged nor congested, nor had it the apoplectic appearance of the right; other appearances were the same. The urine was drawn off and examined by heat and nitric acid, and found to contain a marked amount of albumen. The microscope showed fatty casts, and a microscopical examination of the structure of the kidney showed well marked fatty degeneration.—*Amer. Med. Times.*

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*Report on Hospital Gangrene.* By S. J. RADCLIFFE, M.D., Acting Assistant Surgeon U. S. A., U. S. General Hospital, Annapolis, Md.

CASE II.—Robert Whitehill, private Co. E, 10th Pa. R. C., a tall, able-bodied young man, aged 23 years, wounded and taken prisoner at the battle of Fredericksburg, December 13th, 1862, arrived at this hospital via Richmond on the 11th of January, 1863, per steamer New York. He was wounded twice, both by (supposed) conical balls—the first ball entering about four inches below and inwards from the anterior superior spinous process of the ilium of the right side, and about two inches from Poupart's ligament, passing backwards and emerging on the dorsum of the ilium, through the glutei muscles, six inches posteriorly and above the head of the femur; the second ball entering near the tuberosity of the ischium of the same side, passing forwards and inwards behind the femur, and emerging on the internal aspect of the thigh, upper third, posterior to the great femoral vessels. He received the first wound from the front, and on turning to go towards the railroad he received the second. The orifices of *entrance*, at the time of admission, appeared perfectly healthy and healing well, but the points of exit were not in so healthy a condition. There seemed to be a bright red ring of cartilaginous hardness surrounding the wounds at the points of exit, and the inner surface was filled with a gray, pultaceous admixture of bad pus and a watery fluid, surrounding imperfect granulations. His countenance seemed bright and cheerful, his appetite was good, and the secretions natural, and, as in the former case, no gangrene; no abnormal condition was anticipated from a first examination. About the fourth to the fifth day the points of *exit* began to enlarge and smell badly, the discharges becoming decidedly ichorous, and the edges disposed to turn up, but were not very jagged or uneven. Besides this the circum scribed redness, noticed in the preceding case, was apparent, but more decided in its bounds and of livelier, fresher color. It occupied in space about one inch and a half each way around the sore, in the inner part of the thigh, which was the worst, almost symmetrical or perfectly round. That at the wound through the gluteal muscles not so large.

The integuments within the boundary at the wound of the thigh gradually yielded to the influence of the poison, became darker

and darker, until it appeared as if it had been subjected to the influence of a red or white hot body, *i. e.* charred, and gradually shrinking, finally gave way, and separating in one homogeneous mass, left the parts as if marked and cut out by rule and compass, but involving very little besides the integuments and subcutaneous tissues, or rather did not penetrate so deeply as in the former case. The muscles not much affected, though bare. The other orifice of exit, that on the dorsum ilii, suffered less in extent superficially, the gangrene extending more in the subcutaneous and intermuscular substances, and burrowed more or less every way, leaving the integuments, though much larger than the original opening, much less affected, and comparatively in a sound condition. It would not be very instructive to trace the disease day by day, as sometimes there would be very little change, but it was about the tenth day after the line of demarkation had been drawn, that the dead matter began to leave the sound structures, during which time the discharges were very slight, but of a serous or watery nature and highly offensive. The points of entrance were not affected by the gangrene, remaining quiescent, with loose granulations about the edges. After the sloughs had separated, and the parts had become clean, the edges of the tissued wound were rather inverted than everted, and a healthier condition at once supervened.

The constitutional symptoms were quite dissimilar to the first case. The disturbance was never so great. He had no decided chill to usher in the attack, and little apparently, if any fever. He was more or less in a depressed condition during the whole period, and he exhibited much anxiety at all times concerning his condition, and also much muscular debility. His pulse was feeble and quick, say 100 to 120 per minute, a pulse of debility throughout; his tongue was clean, though pale; his countenance was pallid, the distaste for food constant, no great thirst, and he suffered scarcely any pain, or at least did not complain much until after the separation of the slough, though he suffered somewhat from sleeplessness. At no time did the *fœtor* compare with that of the preceding case, nor was it very great. His bowels were not so prone to looseness, and the atonic symptoms were not so aggravated.

The treatment in this case was conducted in the following manner:—After cauterizing the entire wound, its edges and a part of the surrounding tissue, with nitric acid, I applied a large fermenting poultice, consisting of powdered charcoal, one part, corn meal, two parts, mixed into a proper consistency with fresh yeast. I renewed this twice or thrice daily, every other day using the nitric acid to hem it in from further extension. In about five days the slough began to loosen from the sound tissues, and finally by the tenth day the mass separated and dropped out nearly all at once, leaving the muscles and other structures clean and of a bright shining red color. After the parts were cleansed by frequent washings, I filled the cavities thus scooped out with finely picked lint, and saturated it with acid. nitric. dil. cum creasoto of the before men-

tioned strength, which I had renewed at least twice daily, gradually lessening them as the wound improved. I used also occasionally liq. sodae chlor. dil.

The internal remedies were nearly the same as in the preceding case. To tr. ferri chlor. ʒ i. I added quiniæ sulph. ʒ ss., and gave gtt. xxx. or xl. three times daily, largely diluted with water. I gave him also chalk and catechu when his bowels were loose; solution of sulphate of morphia at night to promote sleep. I gave him also a good nourishing diet, a bottle of porter or milk punch daily, and everything that is usually included in a general supporting regimen, under which he is gradually mending in general health, and granulations are springing up finely in every part of the wound.

CASE III.—Jas. C. Jaycox, private Co. C, 40th N. Y. V., apparently of good constitution, aged twenty-four years, wounded and taken prisoner at the battle of Fredericksburg, December 13th, arrived at the hospital, via Richmond, per steamer New York, January 11th following.

He was wounded by a musket ball, kind unknown, probably at short range, in the external aspect of the upper part of the lower third of the right leg, four or five inches above the external malleolus, the points of entrance and exit of the ball being about two or three inches apart. No fracture was perceived.

The wound on admission gave no decided evidence of local mischief, save in this particular, that the openings were quite large, the granulations in that condition when wounds remain stationary for some time, and the edges were a little pouty and irregular, all of which I attributed to want of cleanliness and attention, as he said his wound had not been dressed since he left Richmond, and then very imperfectly. Nor did his constitution seem to suffer in the least from the injury. His health was notably good. His appetite was good and he slept well at night, and all the secerning organs were performing their functions properly. He did not confine himself in bed, but with the aid of a crutch moved about the room, with every indication that he would soon be well. I used simple dressings, and put him on good diet.

About the fourth or fifth day after admission, the integuments between the orifices assumed, as in the other cases, a dark red or congested appearance, and the discharges were very much lessened, and of a thick, grumous consistence. His appetite failed, his pulse became quick and small, tongue was clean, his countenance and general surface pale, and shivering at the least exposure to the atmosphere, and he exhibited much anxiety and restlessness in regard to his wound and his condition.

From this condition of things the integument gradually gave way, sinking lower and lower from the surface, and finally resulting in one entire soft, pulpy, ash-colored mass, resembling very much old putrid cheese, which filled the wound completely, adhering to the adjacent parts with much tenacity, and

leaving the edges, which were quite circular, though a little jagged and of a diameter of about three inches, thick, shining red, and much everted. This dead fungoid mass adhered so tightly to the tissues below, that it could scarcely be removed by manipulation except in very small particles, resembling then large granules, which were very friable. It now began to enlarge in every direction, slowly but surely, and daily I discovered its borders extending more or less, not only superficially but deeply in the subcutaneous tissues, and in a very irregular manner.

It was not until the slough commenced to separate that he felt much pain. He was somewhat restless at night from the constitutional disturbance which continued *pari passu* with the local affection, but he experienced no direct pain until the muscles were laid bare, and then the weight of the bed-clothes, the application of cold water, dilute nitric acid, or any dressing, or the least handling, caused him much suffering. There was no bad smell at any time equal to either of the other cases, and though the constitution suffered materially, it did not to the same extent as the others. His bowels were easily controlled, but he had the same tendency to looseness as the preceding cases. The pulse ranged from 90 to 120, not much exceeding the latter at any time; his tongue kept remarkably clean, his appetite only medium or fair, thirst not great, skin dry and pale, countenance expectant or anxious, and he was easily affected by the cold air of the apartment. The slough parted little by little with each succeeding washing, and finally, when all were removed, it left the muscular structure beneath in a rough, uneven, or papulous condition; and the edges thick, red, everted, and jagged. By the first of February a healthier action had supervened. Heretofore the changes had been gradual, and the difference in daily reports, though showing progression in the destruction, did not require to be materially attended to. By the sixth of February the parts had become clean, and healthy granulations began to be visible, and with this a marked improvement in the general condition of the patient.

I commenced the treatment of this case by an astringent and anodyne wash of cupri sulph. gr. xvi., ad sol. opii aq., Oj., and the occasional application of Labarraque's solution of chlor. sodæ ʒ i. to Oj, ʒ j. of liq. chl. sod. ad aquæ Oj. Finding this not successful, I ordered the dil. nit. acid and creasote to be applied with a continuation of the dil. sol. chlor. soda. After the slough formed I cauterized the whole surface of the wound, the edges, and adjoining sound skin, with the fuming nitric acid, about every other day; and after the slough separated I had the cavity filled with picked lint, and kept saturated with the dil. nitric acid and creasote, gradually lessening and diluting it more as the condition improved. The internal remedies were the same as in other cases, tr. cal. iron and quinia, morphia to promote sleep, and chalk and catechu to restrain the bowels. He also had beef-tea, porter, etc., etc. The apartment, as in all the cases, was kept well ventilated,

all dressings were promptly destroyed, and all means used to prevent an intensity of the poisonous atmosphere.

The above report was made up to the eighth of February, when by direction of the Surgeon-General all cases of hospital gangrene in this hospital were aggregated in wards suitable for them, and placed under the care of one medical officer, with instructions to take notes, and report the result to the Surgeon-General, through Surgeon McFarlin, in charge. It will be seen, however, that the gangrenous condition of the wounds in these cases had been arrested and converted into healthy granulating sores, from which a successful issue might be confidently predicated. They were no longer cases of gangrene, but extensive granulating sores, and, of course, the treatment required was only such as is usually necessary for such reparation. In the case of Dunkle, the officer in charge of the hospital gangrene wards told me that a colliquative diarrhoea, which occurred after leaving my ward, lessened very much his chances for recovery. I am glad to say that this medical officer is leading them on to a successful and happy termination. Dunkle will doubtless have a permanently fixed leg, it being bent at nearly right angles from the contraction of the muscles, but in the other cases there will likely be no deformity. The granulations and repair have filled up the wounds nearly to the surface; and in the natural course of things a short time only will be required to pronounce them in all respects cases of successful treatment. I have had an opportunity of examining these cases up to March 12th.—*Amer. Med. Times.*

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*Amputations, when to be performed and when not required in Military Surgery.* By JOHN SWINBURNE, M. D., of Albany, N. Y.

[Paper read before the N. Y. State Medical Society.]

The following are the rules which I have adopted for amputation, after careful study and experience; some of these rules I have adopted from the Sanitary Report on "Amputation:"

1. "Cases where a limb is nearly or completely torn away, leaving a ragged stump."
2. "Cases in which the soft parts of a limb are extensively lacerated or contused, and the principal arterial and nervous trunks destroyed, and the bone denuded or fractured."
3. "Cases in which a similar condition (of the soft parts) exists without either fracture or denudation of bone."
4. Cases in which the artery or arteries are destroyed, so as to cut off circulation below the wound, and where gangrene would follow. Circulation ceasing, and the extremity becoming cold.
4. Compound and comminuted fracture of the knee-joint requires

amputation, while the passage of small balls, which do not shatter or open the joint too extensively, does not necessitate amputation.

6. Compound and comminuted gunshot injuries of the ankle-joint made by Minié balls may require amputation, particularly where material injury is done to the arteries. Ordinary gunshot wounds of the same joint do not necessitate amputation.

7. Compound and comminuted gunshot injuries of the femur or tibia which extend into the knee-joint may require amputation.

The foregoing rules are those which I consider applicable to amputation. I will now proceed to give such rules as seem to me most reasonable as governing excision; and shall assume that the main arteries are uninjured, and the parts beyond the wound possessed of full vitality.

1. Excision should be confined to the upper extremities—the shoulder and elbow being the principal parts upon which that operation should be practiced.

2. If the head of the humerus is shattered by a gunshot, excision is the only remedy. If the comminution extends to the shaft, the loose portions only which are deprived of periosteum need be removed, the residue left to granulate. If the glenoid cavity is crushed, it can be removed with a chain saw, or its injured portion gouged out.

3. If the elbow joint is crushed or comminuted by a ball, excision is the only remedy. If the injury is confined to the articulating end of the humerus, remove it, but do not disturb the ends of the radius or ulna; on the contrary, if the injury be confined to the articulating ends of the radius, or radius and ulna, remove both, but not the humeral articulation.

If the articulating ends of the humerus, radius, and ulna are crushed, remove them all. What is meant in the books by partial excision, is the removal of a portion of the joint, such as part of the humeral articulation, or the articulating end of the radius or ulna only.

On the contrary, the removal of the entire half of the joint results in a new articulation, and not in ankylosis, as is often the case in partial excision. If the comminution extends to the shaft of the humerus, or radius and ulna, remove its loose spicula, and leave the rest to nature.

4. In comminuted compound fracture of the carpal end of the radius, or radius and ulna, excision of the articulating ends affords the most reasonable prospect of success. Leaving it to nature is far preferable to amputation. Never amputate for this injury.

5. Compound gunshot injuries of the carpus or *metacarpus* seldom if ever require either excision or amputation. Remove the loose bones, and treat as a simple wound.

6. In compound gunshot injuries of the phalanges excision can be practiced only with varying success, owing to the size of the bullet and smallness of the member. The rule is to save as much as possible. Injuries to these parts inflicted by buck-shot or pistol

balls do not, as a rule, require amputation. On the contrary, most of them can be saved.

7. In compound and comminuted injuries of the humeral shaft excision or amputation should never be performed. The loose spicula should be removed, and the case treated as an ordinary compound fracture. If, however, the comminution extends to the articulation, it should be excised with the loose spicula, while the fragments of the shaft which still retain their periosteum should not be disturbed.

8. The same rule applies to the shaft of either or both bones of the forearm. In all cases avoid constriction by bandaging.

9. The treatment of compound and comminuted fractures of the thigh becomes a matter of serious consideration, since it involves many important points. Statistics from the Crimean War show that in amputation through the hip-joint all died. In the upper third, 87.0; in the middle third, 60.0 died; in the lower third, 56.6 died. While the present war will, I think, demonstrate that even a greater proportion than this prove fatal.

Excision of the *shaft* is evidently out of the question, since all die after the operation. The question then arises, shall we amputate, or shall we treat such cases as ordinary compound fractures? I prefer the latter, and have from the first thought it the most reasonable treatment. The plan I propose is to place the patient on a bed or stretcher, extend the limb as near as possible to its normal length without giving too great pain. Retain it in that position by fastening the foot to the foot of the bed or stretcher by means of adhesive plaster, as in ordinary compound fractures, as I have on other occasions illustrated.\* Make the counter-extension thereon by an inclined plane against which the body impinges by elevating the foot of the bed or stretcher, or the use of a perineal belt fastened to the head of the bed or stretcher. To obviate inversion or eversion of the foot, I place bags of sand on each side of the foot. There should be no bandaging of the leg or thigh. If collections of matter follow, free incisions may become necessary to relieve constrictions, and to facilitate the discharge of such matter and spicula of bone; irrigation or the application of cloth wet in cold or warm water must be continued to the limb until inflammation has passed off.

Under no circumstances must the patient be removed from the bed or stretcher until the consolidation of the bone is considerable, when artificial support can be given, and the patient allowed to go about on crutches. In this way I contend that many more lives can be saved than by amputations, and of necessity with less mutilation. Hence, do not amputate for compound and comminuted fractures occurring in the shaft, neck, or head of the thigh-bone.†

\* See Transactions State Medical Society for 1861; also Medical Times and Medical and Surgical Reporter, same year.

† I here present the condensed report of W. Van Steinburg, M.D., Surgeon to the 55th N.Y.S.V., who has treated twenty-one cases of compound

If the head of the femur is detached, and the joint opened, it may require removal. This, however, may be a point for future consideration.

10. Gunshot injuries of the cancellated structure of the bones which enter into the formation of the knee-joint do not necessitate amputation.

I have seen several instances in which the ball had passed through the head of the tibia without wounding the joint, and still the patients are recovering with good limbs. One case where the ball was found to have passed through the insertion of the *ligamentum patellæ*, and deep into the canelli, was removed by the trephine, and the patient did well. Another did well where the ball was extracted from the cancellæ of the external condyle of the femur. Therefore, unless a fracture of some magnitude extends into the joint, do not amputate.

11. In compound and comminuted fracture of the knee-joint I should advise amputation, though there may be wounds made by bullets through the joint without doing much injury to the bone or soft parts, in which case it may be advisable to try and save the limb. This seems more advisable when we take into consideration the facts as recently elucidated by Dr. Lewis A. Sayre and others, that the joint can be opened freely without much risk of fatal results, and the cases spoken of in this paper where the patient recovered after ligation of the femoral artery, added to the fact of

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and comminuted fractures of the thigh, two of which died. Of these there were three fractured in the upper third, and one death; twelve fractured in the middle third, and one death; six fractured in the lower third, and no death. These were treated by extension, supported by sand-bags applied in the long axis of the bone. This notice is due to the Doctor's sagacity and skill. The profession should know the comparative results, and I therefore submit his tables and remarks entire. If the Doctor could have taken the same cases from the field, and, before material injury was done to the soft parts by bandaging and rough movement, placed them on stretchers, and kept them on the same with appropriate extension, his success would have been much more perfect, since, after continued growing of the muscles has to any considerable degree taken place, extension cannot be effected as it could at first, and hence the imperfection spoken of. He says: "Out of twenty-one cases of compound and comminuted fracture of the thigh, taken indiscriminately, nineteen recovered with tolerably useful limbs. My plan of treatment has been by simple extension, as taught me by Dr. Swinburne. One case I will relate as well as possible from memory. Adj't. Wallace, 1st N.Y., was struck by a rifle-shot at the junction of the lower and middle third, the ball passing directly through 'antero-posteriorly,' comminuting the bone, and drawing the spicula into the muscles of the posterior part of the thigh. These I removed, and placed him on a stretcher, making extension from either end of said stretcher. I placed a leg of an old pair of knit drawers filled with sand upon each side of the broken limb, and told him not to suffer any one to remove him until he reached the General Hospital. He was taken to Washington, and there placed upon a bed, and the extension kept up. The wound was made on the 30th of June, and in October he returned to the regiment, with a leg two inches shorter, and foot everted. The eversion was the result of neglect in treatment, evidently."

the frightful mortality attendant upon amputation, even in the lower third of the femur; and we have, I think, data sufficient to warrant the effort to save the limb, where there is not great comminution of the joint.

The simple fact that a ball has been or is imbedded in the cancellated structure of the head of the tibia or condyles of the femur does not warrant us in resorting to amputation, and particularly so where the joint is not opened. I have in many instances removed balls from these positions by the trephine and gouge.

12. In compound and comminuted fracture of the shaft of the tibia, or even tibia and fibula, from bullet wounds, amputation should not be practiced, since hundreds who have *accidentally* escaped the surgeons have recovered with only slight deformity. I think as many will survive by simply treating these injuries as if they were ordinary compound fractures from any other cause as would from amputation, and of course with much more useful limbs.

I now know of at least a dozen cases which were destined for amputation that are now recovering, and most of them will be as perfect as before the injury. As soon as practicable after the injury the wounded man should be placed on a bed or stretcher, and kept there until consolidation of the bone takes place, or until removed to some permanent place for treatment. Extension sufficient to keep the limb to near its normal length. Lateral support given by means of sand-bags placed longitudinally, to prevent inversion or eversion of the foot, as well as for the proper support of the limb. Extension kept up with no bandaging, and the treatment proceeded with as previously detailed in analogous injuries of the thigh, or as if it were an ordinary compound fracture of the leg; but under no circumstances should excision be practiced. All that can be required is to enlarge the incision, and remove loose spicula and other foreign bodies. I may here state the great and potent reason why so many compound fractures do badly is the fact that the injured limbs are either bound up tightly with bandage and splints, or carried from hospital to hospital without even the support of a stretcher; a proceeding which destroys even a limb with simple fracture, and much more one of compound and comminuted fracture.

13. Simple gunshot injuries of the ankle-joint do not necessitate amputation, while compound and comminuted fracture of this joint, and particularly where the arteries are much injured, may require amputation. Though, with proper support, water-dressings, irrigation, free incisions, etc., a great majority will recover without operative interference. The same rule is applicable to gunshot wounds of the foot as of the hand, and I can safely say that there is scarcely a bullet wound of the foot which requires amputation. I have seen the whole scaphoid bone carried away, and still a good recovery took place. So the destruction of the astragalus may occur, and still recovery may go on favorably. See the case of Garibaldi, in whose ankle-joint the ball remained for some weeks, and without unfavorable results.

14. In compound and comminuted gunshot injuries of the tarsal and metatarsal bones the same rule of action should be adopted as in like injuries of the hand, with the exception that a slight deformity is not of such vital importance in the former as in the latter.

No excision should be performed in the second or inflammatory stage.\* If the operation cannot be performed before this stage sets in, we ought to defer operation until the true second or suppurative stage.

In conclusion, I cannot urge too strongly the importance of having an abundance of stretchers for the immediate relief of the wounded, and particularly those wounded in the lower extremities, to which can be attached an India-rubber cover in case of heavy dews or rains. By this means the patient is treated more successfully some days after injury than if he were transferred to close and ill-ventilated hospitals, houses, or even tents, since you avoid the danger of *foul* and pus-generating air. These appliances keep them from the wet above as well as below. There should be at least a sufficient number of these stretchers to supply all cases of amputations of the lower extremities, as well as compound and comminuted fractures of the same, where any effort is being made to save the limb; without them our efforts are futile, since the bedstead or stretcher becomes the splint. So in all cases of wounds of the trunk.

In excisions of the shoulder or elbow-joint, or in any severe injury of the shaft, where an attempt is being made to save the limb, these *appliances* are, to say the least, a *great auxiliary* to the *successful treatment* of this class of *injury*; and I might say, an *indispensable splint or support*.—*American Medical Times.*

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*Bromine as a Prophylactic in Erysipelas, Diphtheritic Affections, etc.*

MEDICAL DIRECTOR'S OFFICE,  
LOUISVILLE, KY., March 1, 1863.

SIR: I desire to draw the attention of your readers to the use of bromine in the prophylaxis and treatment of erysipelas, diphtheritic affections, and in hospital gangrene. This agent has been used in the various hospitals in this district with very important results, in the following particulars:

1st. As a prophylactic in wards where cases of erysipelas have broken out.

2d. In the treatment of erysipelas and diphtheria by the inhalation of the vapor, and by topical applications of both the vapor and fluid.

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\* This article divides gunshot injuries into three stages, the second of which is the congestive or inflammatory.

3d. In hospital gangrene and in all sloughing sores by the topical application of the solution of bromine in the bromide of potassium.

I subjoin the directions for the use of the bromine for the purposes above indicated. These directions are prepared at the request of Surgeon Perin, Medical Director of the Army of the Cumberland, who, in conjunction with Medical Inspector Lyman, Surgeon U. S. V., is now introducing the use of the bromine into the General Hospitals at Nashville and Murfreesboro, Tenn.

Yours, etc.,

M. GOLDSMITH, Surgeon U. S. V.,  
Superintendent of Hospitals at Louisville, Ky.

*The Compound Solution of Bromine* is prepared thus : Take of bromine, one Troy ounce ; bromide of potassium, one hundred and sixty grains ; distilled water, enough to make four fluid ounces of the entire mixture.

#### DIRECTIONS FOR USE.

1. *For Fumigation.*—Place vessels, containing *one ounce* of the solution, at different points of the ward, and in number sufficient to secure in the latter the constant presence of the odor of bromine.

It should be borne in mind that, if the vapor of bromine comes in contact with the vapor of water, hydro-bromic acid is formed ; therefore, when there is much of the vapor of water disengaged in the apartment, the quantity of the vapor of bromine must be correspondingly increased.

2. *Topical Application of the Vapor.*—A piece of *dry* lint is to be placed over the diseased part ; over this is to be placed another piece of lint, *moistened with the solution of bromine* ; over this, a *third* piece *spread with simple cerate* ; the whole to be covered with oiled silk and bandage, so arranged as to retain the vapor in contact with the diseased surface as long as possible. The solution is to be removed as often as it becomes exhausted by evaporation.

3. *The Solution, in Substance, as a direct Application, in Hospital Gangrene, Diphtheria, Gangrene of the Tongue, and other diseases of this nature.*—The parts are first to be dried by the application of charpie ; then the sloughs, if thick should be trimmed out with forceps and scissors as much as possible, for the thinner the slough the more effective is the remedy. The parts having again been dried, the solution is applied by means of a mop, or a pointed stick of wood, in quantity sufficient to saturate the sloughs. If the sloughs undermine the skin, or dip down into intermuscular spaces, the solution must be made to follow, with the pointed stick, or by means of a glass syringe.

If the application has been effectual, all odor from the diseased surface ceases, and the sloughs become somewhat hardened. The remedy should be reapplied every second hour, as long as any odor of putrefaction is present, or as long as the sloughs appear to be diffused. It is not always necessary, especially when the

sloughs are diffluent and thin, to use the solution in its full strength; it may be weakened by the addition of water, as the disease subsides.

The points to be especially attended to, in the use of the solution of bromine, are two: 1. The solution should be applied in strength and frequency sufficient for the impregnation of *the whole of the sloughs*; 2. To secure this end, the application *should be made by the Surgeon himself*, and never be trusted to a nurse. If the sloughs are thick and cannot well be trimmed, the bromine may be introduced into the thickness of the slough by means of a hypodermic syringe.

After the topical application of the solution, the parts, when so situated as to render it practicable, should be subjected to the influence of the vapor. (See par. 1.)

Surgeons will do well to bear in mind that bromine is a new remedy for the purposes indicated above. The directions for its use, given here, are those followed in the military hospitals of this city; it may be found advisable to modify them as experience with the remedy accumulates. It is, therefore, earnestly recommended that the subject be studied diligently, that the effects of the remedy be carefully watched, and that the application be varied as new facts are developed in its use.—*Amer. Med. Times.*

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*Our Surgeons upon the Field.* Being Extracts from an Address to the Graduating Class of Bellevue Hospital Medical College. By FRANK H. HAMILTON, M. D., Prof. of Fractures, Dislocations, and Military Surgery, Medical Inspector, U.S.A.

It is perhaps proper to assume, gentlemen, that during the present unhappy war, some of you will choose to enter the service of your country as surgeons in the army. We shall deem it necessary, therefore to give you a few words as to the nature of your duties in this capacity, and the manner in which they can be best performed.

Possibly your country may yet have need of you in another capacity. You may yet be called upon to shoulder the musket, and to enter the ranks as fighting men. If so, we hope you will not hesitate to respond to the call. Surgeons ought to make good soldiers, having been educated in a Spartan school, where cowardice is accounted a crime. The man who can remain cool and self-possessed in the midst of pestilence, ought to stand well the fire of musketry. Can any one suppose that the forty volunteer physicians who never turned their backs, but who fell with their faces towards the enemy at Norfolk, in 1852, or that any one of those thousands—your compatriots in arms—who have fallen on other fields, have died any less heroically than Warren on Bunker's Hill? or that they would have marched any less steadily upon the batteries at Fredericksburg than did the brave men under Couch and Sumner?

We think they were all brave men alike, and alike entitled to public gratitude; and we entertain no doubt that when you are needed for such services you will, under the inspiration of the same patriotism, do whatever is demanded of you.

But it is not probable that you will ever have any other mission upon the battle-field than that of surgeons. Your duty will be to save and not to take life, to bind up wounds and not to make them. You will have, therefore, no distinction to make between friends and foes. You will be employed solely to mitigate the austerities of war, by undoing in some measure the evils which war has done.

It is but justice to say that, by the character and qualifications of those men who have entered the service of the United States, whether as regulars or volunteers, the position of a surgeon in the army has been rendered eminently respectable. We venture to say that no officers, in any other department of the same rank, are more respectable. The surgeons of the regular army have all been subjected, before admission, to an examination as rigid as that which is required for admission to any of the armies of Europe: and their reputation for learning is notorious, and has been the subject of observation and of admiration the world over among medical men. A defense of these gentlemen would be out of place, when there is no one to dispute their position.

As to the volunteer surgeons it might be sufficient to say that, with few exceptions, they are the only commissioned officers of the volunteer army who have had any previous education or training to the peculiar and respective duties which they have been called upon to perform. With very few exceptions they are graduates of medical colleges, many of them having completed their education in large hospitals. A very large proportion of the brigade surgeons and full surgeons of regiments have been themselves in charge of civil hospitals, or they have been engaged before entering the service in practice, and there is nothing in the experience of a camp, except the mere routine of business, with which they are not perfectly familiar. Among all the surgeons of the army you will not probably find one who was, up to the moment of his entrance upon the performance of his duties, a merchant, a lawyer, a tailor, a shoemaker, a grocer, a saloon-keeper, or anything else, either more or less, than a physician and surgeon.

Moreover, nearly all volunteer surgeons have been subjected to examinations by regularly constituted State Medical Boards, before their commissions have been given to them. In no case which has come to our knowledge has this examination been omitted. While it is well known that at first, and for many months after the war began, no officer of the volunteer service, not in the medical profession, was, in a single instance, subjected to an examination of any kind, nor, in general, were any testimonials required as to intellectual or moral qualifications. Nor is there at the present moment any such examination or testimony uniformly demanded. Officers of the line are liable to an examination by a Board appointed

for that purpose, upon the complaint of their commanding officers, that they have been found incompetent. And this is all. Medical officers are liable to similar examinations before similar Army Boards.

The presumption is, therefore, established in our favor, and we are happy to be able to verify this presumption by an intimate personal acquaintance with a large number of the volunteer surgeons.

Our official position in the army of the Potomac has given us unusual opportunities of knowing these men, and we think that it ought to be received as a significant fact, that of more than two hundred volunteer surgeons who came directly under our notice, and upon whose conduct it was our duty to report, we have had occasion to recommend for removal but one.

While lying in front of Richmond, by order of the Commander-in-chief, we were directed to assemble the surgeons of the fourth corps, in order that they might deliberate and report upon the causes of the sickness which was then decimating our troops, and to suggest what, in their judgment, were necessary and practical remedies; and a more intelligent body of men it has rarely been our privilege to meet in any deliberative assembly. Their report, having been received at headquarters, was approved, and most of its suggestions were promptly carried into execution.

It was certainly no part of our intention, when we began to write this discourse, to compose a eulogium upon the medical officers of the army. But since we have spoken of them, it has occurred to us that, inasmuch as their official reports are seldom made public, you possibly may not be aware of what they have been doing: and that by a simple, brief narrative of some of their labors, you may gather certain useful hints as to what you will be expected to do.

The health of troops has always an intimate and direct relation to the sanitary police of the camp.

None understand this better than medical men: since the reciprocal influences of cleanliness, purity of air, and the physical condition of the body, constitute a great part of our medical studies. This knowledge, the result of reading and of experience, physicians have carried with them into the field.

But it must be remembered that it is not in the power of surgeons to enforce hygienic measures without the support of the commanding officers: and they have not always been able, therefore, to apply their knowledge successfully to the management of the interior police of the camps. Indeed, we are compelled to say, that there are but very few of the commanding officers in the volunteer service who understand the relations of these matters as physicians understand them. Our views upon the subject of cleanliness among troops have a much wider scope than theirs. We see in the lack of sanitary police the ultimate defeat and disorganization of our armies.

When garbage lies everywhere in the company streets, and the

air has a noisome odor both within and without the tents, we have found, also, that the men are dirty, ragged, and sickly—their muskets are rusty and out of order—they are insubordinate, mutinous, without drill and without discipline. They have no *esprit de corps*—no self-respect—no manliness—no courage; and they will not fight.

These are the links which compose the chain. Dirt at one end, and cowardice at the other—commencing in the camp at Alexandria, and ending in the rout upon the plains of Manassas. They are inseparable—and, in our opinion, whoever is responsible for the one, is responsible for the whole.

"Give me," said Major-General Keys, when, after our weary march of seven days, we first came in sight of the James river—"Give me the two best regiments in my command. I wish to post them at Turkey's Island Bridge." And after a moment's pause, he added—"the 2d Rhode Island and the 7th Massachusetts." We could have anticipated his choice, for we had inspected their camps often, and we knew from experience that troops whose quarters were always clean, never suffered their reputation to be soiled in battle.

Turkey's Island Bridge was, in some sense, the key to Malvern Hills, where, on the following day, our troops achieved a most brilliant victory, and the exhausted enemy ceased the pursuit.

Col. David A. Russel, who commanded the 7th Massachusetts, and Col. Frank Wheaton, who commanded the 2d Rhode Island, have both been promoted to the rank of Brigadier-Generals, as they well deserved to be; but in our opinion the effectiveness, value, and bravery of these two regiments was no less due to the perfect system of camp police carried out from day to day by Surgeons Holman and Carr, than to the splendid talents of their respective colonels.

We have had equal opportunities, also, of observing the conduct of our surgeons upon the field of battle. We have seen them under fire, deliberately dressing the wounds of the soldiers, or administering to them stimulants, nourishment, and such other comforts as it was in their power to furnish. In the performance of such duties one of my personal friends was killed, and several others have been severely wounded. More than once, in our official reports of battles, we have had occasion to call the attention of the commanding officers to the zeal and intrepidity of regimental and assistant surgeons.

After a battle, also, whether the army has been victorious or has suffered a defeat, the duties of the medical officers continue without interruption. In either case they have usually been compelled to labor incessantly for two, three, or more successive days and nights, without sleep, without rest, and sometimes without food even.

It is well known that both Drs. Milnor and Sutton, exhausted by their labors with the wounded at Savage's Station, finally perished, while in the hands of the enemy, from actual starvation.

On such occasions, also, the surgeons have usually been left

alone to do their work. Their nurses, cooks, servants and orderlies are gone. Their wounded men are in deserted houses, in barns, under sheds or hayricks, or under the shade of a tree upon the open field. They have often no candles, no seats, tables, or beds; no cooking utensils; no food, perhaps, or stimulants. Everything, almost, has to be improvised.

It has often been to us a matter of surprise how much the inventive genius of a surgeon, sharpened by the appeals of those who are suffering, has been able to supply.

A bivouac fire furnishes at night both light and heat; a log is a seat; a fragment of a board is a table; a few tough saplings, laid upon four crotchets, with some leaves, or a blanket, constitute a bed; cold water and words of encouragement are excellent stimulants.

Remember, gentlemen, that to the wounded and fainting soldier, *Hope* is a better cordial than brandy. And that you ought never to omit to offer words of encouragement, when it is in your power to do so.

As for food, it is well enough to know that commissaries are seldom found upon the field, either immediately before, immediately after, or during the battle.

We do not in this remark intend to imply a censure upon these officers. Their duties are laborious and perplexing in the extreme; and in order to answer all the demands which press upon them at such a time they must be ubiquitous. We only intend to state a fact; and to advise you that you will be obliged generally, after a great battle, to feed your own wounded men.

Surgeons have many times during the present war performed such miracles. After the battle of Seven Pines, with 4,000 wounded men on our hands, and with comparatively nothing to feed them, some of the surgeons, by consent of General Sumner, killed several of the horses belonging to his orderlies, and made of them a most palatable and nourishing soup. Others followed the example of Miss Nightingale at Scrutari: finding supplies of crackers and of coffee with no commissary to give the required permission to use them, they asked permission of God, and in His name broke open the boxes, and distributed the contents.

Field surgery—that is, surgical operations made under the circumstances which we have now described—has been made the subject of unfriendly criticism, by some who have been permitted to see our patients after they have been carried to the rear.

But intelligent medical men seldom venture to judge of the propriety of an operation, or of the skill exercised in its execution, by the condition of the patient or of his wound after the lapse of several days.

The most skillfully made stumps may ulcerate, slough, and open—the skin and muscles may retract and expose the bone, from faults of the constitution; from the severity of the shock attending the accident; from exposure to heat or cold; from rude jolting

over rough roads, or from careless handling on the part of those who move them from place to place.

If, however, it could be clearly shown that there has been a good deal of bad surgery in the army ; that operations have not always been judiciously timed, or skillfully made, or the wounds neatly dressed ; would it justify the severity of the judgment which has sometimes been given in these cases ?

Have any of these gentlemen, who find it so easy, and who feel it so much their duty to point out our errors, ever made an amputation "under fire?"

It is no uncommon thing for a surgeon on the field to be compelled to change his position once or twice during an operation, on account of a change in the direction or in the range of the shots. Such interruptions, together with the urgency of the claims of other wounded men who are lying about, render it necessary to decide quickly and to execute rapidly ; and must compel the army surgeon sometimes into errors of practice, which under other circumstances, he might have avoided.—*Amer. Med. Times.*

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*The Cinchona Forests of South America.\** By DR. KARL SCHERZER.

When the frigate Novara left Batavia, I cherished the hope that our stay in South America would be sufficiently long to allow of undertaking a journey to the cinchona forests ; and to be able to answer, through personal observation, certain questions, entrusted to us by Dr. Junghuhn, of Lembang, in regard to the conditions essential to the growth of the species of cinchona cultivated in Java. Instead, however, of the expedition as originally planned, it was only allowed me to tread the classic soil where Humboldt gathered the first scientific treasures ; and this only for so short a time, that my visit had to be limited to the capital of Peru and its immediate neighborhood. A scientific excursion to the cinchona forests lying far in the interior was out of the question, under the existing circumstances. I did not neglect, however, to translate the inquiries confided to me by Dr. Junghuhn into the English and Spanish languages, and to forward copies of these interesting desiderata to such persons in Chili, Peru and Bolivia, who, from their mercantile position, or their interest in scientific discussions, seemed to be able to contribute towards deciding several questions respecting the growth of the cinchona in its native country. I took pains, at the same time, to collect for myself information on this subject, as often as opportunity offered, and by a very fortunate accident (as it appeared to me) I met in Lima Mr. Campbell,

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\* From the Voyage of the Austrian Frigate Novara around the Earth, in 1857, 1858 and 1859. Vienna, 1862.

a merchant of Bolivia, who for many years has been living in Tacna, and has paid particular attention to the cinchona trade. For the chief export of this important drug is from Bolivia, and not from Peru, as its commercial name, "*Peruvian bark*," might lead one to suppose. This designation dates from the time when the Bolivia of to-day (in whose forests the cinchona chiefly grows) was an integral part of Peru, and was called Upper Peru; while from the present republic of Peru scarcely any Peruvian bark is exported, and that collected in New Grenada and Ecuador, and known under the name of Pitaya bark, is of a quality far inferior for medicinal purposes.

The most important fact which I am at present able to communicate is in correction of a wide-spread error, that by the greed of gain the extermination of the cinchona tree in its native home is near at hand, and that the supply of the remedial agent derived from its bark, which has become to the practising physician as indispensable as the Peruvian potato is to the working classes, will soon no longer suffice for its daily-increasing use. The Calisay region (i. e., in which the Cinchona Calisaya, whose bark is most prized and valuable, occurs most abundantly and thrives best) stretches from one degree north of Lake Titicaca to the twentieth degree of south latitude. In the forest of Cochabamba, viz., between this point and La Paz, the cinchona occurs more abundantly than in those forests lying parallel to La Paz, in which it is now found only at such distance from the city that the cost of transportation through the wilderness amounts to 17 pesos per hundred weight. The forests lying more southerly, on the contrary, are still untouched by the axe of the *cascarilleros*. The largest proportion is exported from Taena and Arica; a small quantity only, suspected of being contraband, goes northward from Lake Titicaca, in order to be shipped through Port d'Islay.

From the district above mentioned 8 to 10,000 hundred-weight of bark could be gathered annually for an indefinite period, without the least danger of exterminating the tree. Since 1845 the export of cinchona bark from Bolivia has been a monopoly of the government, which conveyed the right to a company which bound itself under a certain sum to the yearly export of 4,000 hundred-weight.

This company paid the *cascarilleros*, or persons who gathered the bark in the cinchona forests, 25 to 30 pesos, for every hundred-weight of Calisaya bark delivered in La Paz, the chief city of Bolivia. But this arrangement had but partial success, for speculation and avarice, as well as the continual political unsettlement and alterations in the government of the country, stood in the way of the quiet development of this branch of industry and trade. Each new president wished to draw the greatest possible gain from the natural treasures of the soil, and the sum demanded for the right to export the cinchona bark constantly advanced. In 1850, a native mercantile house in La Paz paid to the bark gatherers 60 pesos for

every hundred-weight, besides an export tax to the government of 25 pesos per hundred-weight, while the contractors bound themselves to a yearly collection and export of 7,000 hundred-weight. The exorbitant price paid to the *cascarilleros* occasioned an enormous quantity of Calisaya bark to be brought to La Paz. In order to restore the average, and not to fill the market far beyond the demand, the government now prohibited the cutting and gathering of the cinchona bark. Within eighteen months 18,000 hundred-weight had been delivered, and this circumstance caused such a fright among the monopolists that they declared themselves bankrupt, and were only spared from complete ruin by the moderation of the government, which took possession of the whole stock, paid the speculators with certificates, redeemable in certain periods, and concluded a new contract with a native mercantile house, in which the selling price of an hundred-weight of bark delivered in La Paz was limited to 52 pesos clear of further export duty.

As soon as the present stock is exhausted, it is probable that the prohibition on the cutting of the Calisaya bark will be again withdrawn, and by the serious lessons learned in the mean time, the excessive and dangerous eagerness of the *cascarilleros* for collecting may be prevented.

My visit in Java was just at the time when chemical experiments were being tried on the bark of the young cinchona trees, and the fact that in these the costly alkaloid was not found, excited the apprehension that the bark of these trees, cultivated with such great care, would perhaps be entirely destitute in the land of their adoption—under altered climatic and geognostical circumstances—of their most valuable constituent. But the information obtained by me in South America shows that even in its native home the quinia is met with only in the bark of the older trees, and its quantity bears a proportion to the age of the branch. The bark of the trees which are 50 years and more in age are richest in quinia. To the ignorance of this fact must probably be attributed the annual felling by the cinchona-gatherers, or cinchona-hunters (*Cazadores de Quina*) during the time of the Spanish rule, of 800 to 900 cinchona trees of 4 or 5 years of age, in order to obtain the 110 hundred-weight of bark which was sent from Payta around Cape Horn to Cadiz, exclusively for the use of the royal court.

In reference also to the quantities annually exported from South America, and consumed in European preparations, very considerable errors have crept in, even in scientific circles.

The total export of cinchona from South America, from 1830 to 1860, has not exceeded, according to reliable accounts, 200,000 hundred-weight\* (the seven inferior kinds not included), while of Calisaya, the real red bark (*cascarilla roja*), certainly not more

\* Weddell, on the contrary, states that one manufactory, that of Pelle-tier, Delondre and Levaillaux, in Havre, had used in one year (1837) not less than 17,400,000 hundred-weight of the best cinchona bark in the production of quinia. This is either a typographical error, or a colossal exaggeration.

than 120,000 hundred weight has been sent abroad. While thus the yearly export of Peruvian bark appears to be far less than is generally supposed, a species of cinchona has lately for the first time been discovered in the forests of Bolivia, between Tarija, Cochabamba and La Paz, whose bark is said to possess the same characteristics as that of the *Cinchona calisaya*. The curate of Tarija has offered for sale nearly 3,000 hundred-weight of this valuable bark (called *Sucupira* by the Indians). The position of the forests is so favorable for export, that the freight from Tarija to Iquique, the nearest seaport, is but from 8 to 10 pesos per hundred-weight.

Upon referring to these communications, and to the not inconsiderable increase which has resulted from the successful propagation of the cinchona in Java and the East Indies, all apprehension may disappear that this noble tree is nearly exterminated, and suffering humanity threatened, by ignorance and vandalism, of being deprived of one of the most active and important of the physician's remedies.—*American Journal of Pharmacy*, from *Vierteljahrsschrift für Praktische Pharmacie*, Bd. xii. H. I.

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*Fistula in the Pericardium (?)*—M. C. D., aged 2 years and 4 months, was admitted into Hospital for Sick Children, Nov. 7, under the care of Mr. Thomas Smith, for a fistulous opening on the left side of the middle left line of the abdomen, between the cartilages of the eighth and ninth ribs. A probe passed into the opening glided between the ribs and passed upwards towards the middle line of the chest for about four inches. When in this position the probe follows the movements of the diaphragm closely, that part of the instrument which is external ascending during inspiration, and descending as the diaphragm goes up in expiration. The end of the probe quivers with each pulsation of the heart.

The history of the case was as follows: Five months ago the child was ill and had a swelling at the seat of the present fistula. This swelling was opened, and a pin was searched for, which the child was thought to have swallowed. No pin was found. The child was very ill and feverish after the operation, and the wound had ever since remained open, nor did it seem inclined to close. There was a scanty but persistent discharge from it.—*Med. Times and Gaz.*, March 28th, 1863.

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*Marriages of Consanguinity*.—Dr. Dévay, after a lengthened inquiry into the subject, concludes that we may in future include consanguinity in the catalogue of morbid etiology, as far as regards the human race; and that as regards animals also, the evils resulting from unions of consanguinity are equally manifest, notwithstanding the assertions which have been made to the contrary. Hence, therefore, it is the duty of the medical man to oppose alliances of consanguinity by his instruction and advice.

## Bibliographical Notices and Reviews.

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*Transactions of Ohio State Medical Society, 1862.* Pp. 125.  
Cincinnati: S. G. COBB, Printer.

This volume has been for a short time on our table. The delay in issuing it by the Publication Committee originated in the circumstance that some of the papers read by title at the meeting were not forthcoming at the time when needed by the printer.

The volume contains the *Valedictory Address* of the retiring President, M. B. Wright, M.D.; *A Prize Essay* on the *Use of Anæsthetics in Obstetrics*, by H. Culbertson, M.D., of Zanesville; and a Report of the Committee on Medical Literature. The Committee consisted of Drs. J. C. Reeve, S. G. Armor, D. S. Gans.

As it regards the merits of these papers, we have no time for lengthy remarks. In a literary point of view, they are all very respectable—quite so.

The Address of the retiring President is made up mostly of medicine and politics. The unhappy state of the country at the time it was delivered furnished abundance for comment and criticism to those who were disposed to exercise themselves with such subjects. Of course, the war involves much that relates to medicine. But medicine in itself has nothing to do with the war, its causes, or policy. Every thing pertaining to the health of the troops may come legitimately up before a State Society for consideration. What has been at the foundation of the strife, and the impulses by which it is and has been prosecuted, are subjects that have, as far as we can see, no connection with medicine, unless there is such a thing as a National Physiology. In that event the inquiry might have been proper, for there is no disputing that all the "physiologies," of right, belong to medicine—they do.

Knowing the diversity of opinion that usually obtains upon matters merely of opinion, the author of the address divided himself, in discussing some questions, so as to be respectively on each side about half of the time. By this course no room was left for complaint among the hearers. Each side received his share of

crumbs as well as cuffs. As the author, however, moved along through his subject, notwithstanding all his studied caution, inclinations were every once in a while visible.

The Essay of Dr. Culbertson, discussing the "Use of Anæsthetics in Obstetrics," has had considerable labor expended upon it. The author has shown, too, a commendable degree of zeal in collecting the opinions of members of the profession. The following are the conclusions of the author:

Conclusion 1st: That there is no nervous connection between the mother and foetus, through which anæsthetic agents can impress the latter when given to the former.

Conclusion 2d: It is improbable anæsthetics can effect the foetus, through the circulation, except in protracted cases of labor, and there it is highly probable but to a limited degree, compatable with the life of the child.

Conclusion 3d: That these agents promote labor by relaxing the cervix and os uteri and the perineal structures, and to a limited extent by positively serving as a parturient on the body and fundus uteri; and the latter effect we believe occurs when given by stomach.

Conclusion 4th: That although in certain stages of labor anæsthetics retard, in others they accelerate parturition, and therefore in the main such remedies do not lengthen this process.

Conclusion 5th: That humanity demands, and medical science dictates, that the human female should be relieved from the acute suffering of certain labors, as well as man or woman from other forms of pain.

Conclusion 6th: That the state of circulation in the pregnant and parturient female does not, with but few exceptions, present any obstacle to the exhibition of anæsthetics; while many of the complications demand their use.

Conclusion 7th: That most unnatural cases of labor are by these agents more readily amenable to the medical art.

Conclusion 8th: That the nervous system, in most cases of labor, is placed in a most favorable condition for recovery by the use of anæsthetics.

Conclusion 9th: The labor-pain so excites the general nervous system of the parturient female, as to induce a tolerance of anæsthetics.

Conclusion 10th: That excitement, or sedation, occasionally results from the use of these remedies in labor, offers no argument against their use, inasmuch as these effects are not followed with any unfavorable results.

Conclusion 11th: That these agents promote the vaginal secretions.

Conclusion 12th: That there has not been reported any well marked case of maternal or infantile mortality from the use of anæsthetics in labor.

Conclusion 13th: That those blood changes induced by the inhalation of anæsthetics are not peculiar to labor; but are in fact a darkening of that fluid, (from the unexpelled carbon,) as well as a decrease in its density.

Conclusion 14th: That there are some facts contra-indicating the use of these agents, peculiar to labor.

Conclusion 15th: That nausea and vomiting sometimes result from the use of anæsthetics in labor, as well as in other cases.

Conclusion 16th: That it will require further experience to show in which temperaments these agents act best, and in which the most unfavorably.

Conclusion 17th: That the quantity of anæsthetics given is generally too large, and that if exhibited in an instrument the amount could be reduced, and a safer anæsthesia secured.

Conclusion 18th: That the first effect of chloroform on the animal fibre is to cause contraction, and the second relaxation.

Conclusion 19th: That labor-pain induces contraction of the vascular system, as well as increased activity of the circulation.

Conclusion 20th: That chloroform, and it may be ether, does not affect the secretions unfavorably.

Conclusion 21st: That ether is the more stimulating, chloroform the more sedating. The first is generally active enough for ordinary labor, but the second is needed in surgical midwifery, where a profound anæsthesia is desirable, unless maternal sedation contra-indicate.

Conclusion 22d: That ordinarily in labor the anæsthesia need not be carried beyond partial insensibility, but in extraordinary examples (already cited) unconsciousness must be induced.

Conclusion 23d: Diseases of the organs of the chest and head, but not essentially those of the abdomen, generally contra-indicate the use of anæsthetics.

Conclusion 24th: That these agents aid convalescence, both immediately and remotely, by removing the evil effects of pain.

Conclusion 25th: That several experiments performed by myself show, that by a certain application of galvanism an apparently dead etherized animal was restored.

The reader will notice among other things that the author arrives at the conclusion that chloroform is beneficial in natural labor. This conclusion will detract very much from the confidence that might have been extended by the profession to other points discussed. The idea that a natural process—one that has been fixed up by the Good Man, and that, too, in the most finished, elegant, and exquisite style—such an one, for example, as the parturient—can be improved by the arts of man, is refreshing. It has been discovered that the pain connected with the process of birth belongs to the Mosaic Dispensation, and that the New requires it should be abolished (Prof. Simpson). Badinage aside, a great many are so constituted as to believe that all of the natural processes are perfect in their way, and every attempt to improve them

is mere presumption, implying the existence of powers superior to those of the Creator.

The value of chloroform in obstetric practice is confined to a very limited number of cases. The great majority of cases of labor require no artificial interference of any kind. This is a truth, an important truth, the welfare of the race considered. And until a practitioner is able to appreciate it, he may be classed among those who have something very important to learn.

The Report of the Committee on Medical Literature is pretty good in its line—short, but to the point. The things literary of the State are passed in review, and some very good remarks made. We have no space, however, for comment.

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*Chemistry.* By W.M. THOMAS BRANDE, D.C.L., F.R.S.L. & E. of Her Majesty's Mint, Member of the Senate of the University of London, and Honorary Professor of Chemistry in the Royal Institution of Great Britain; and ALFRED SWAINE TAYLOR, M.D., F.R.S., Fellow of the Royal College of Physicians, London, and Professor of Chemistry and Medical Jurisprudence in Guy's Hospital. Philadelphia: Blanchard & Lea. 1863.

This is a new work on Chemistry. The books already before the profession on the subject of chemistry are thought by the authors of this treatise to be amenable to grave objections as "*Handbooks*," and hence the effort to furnish a work that will answer completely the purposes of the student.

We have for some time been of the opinion that the books on chemistry have of late been sacrificing too much to symbols, formulæ, and mystical language, and thus they have concealed the great facts of chemistry in a haze of technicality. What the student of medicine needs is a work giving the general properties of bodies, a full description of each substance, and an account of the tests required for its detection. In order that the reader may have some idea of the work, we give the following from the preface:

"We see no reason for adopting an esoteric method of dealing with this Science. On the contrary, it appears to us, that without departing from the true objects of Chemistry, its facts admit of explanation, in a form to be intelligible to any educated man. It is not necessary to the progress of

this Science, that its language should change with the opinions of every new theorist. The numerical value of atoms and volumes is not of so much importance to a student, as a correct description of the properties and uses of the substances which they represent. On this part of the subject, much labor appears to us to have been wasted by certain writers. They have apparently been engaged in working out an idea, and seeking for some Utopian standard of perfection, in a new system of notation: but in endeavoring to settle contested points on a firmer basis, they have incurred the risk of unsettling everything. Thus, instead of pursuing the inductive method, and fitting hypotheses to facts, they have introduced a deductive system, by which facts are made to bend to hypotheses; and the elementary composition of bodies is altered, in order that they may correspond to certain artificial types. There is an old French proverb which it may be well to bear in mind, in reference to this practice: '*Quand la Nature dit que telle chose est, et l'homme dit que telle chose n'est pas, il faut en croire la Nature.*'

"While we do not undervalue the usefulness of a correct language to express the facts and theories of a Science, we have the strongest objection to frequent and capricious changes, in which the good is uncertain and prospective, while the evil is certain and immediate. Chemistry is not the Science of one nation, of one profession, or of one section of chemists. Among civilized nations it has now a community of language, and by this language, it is more closely linked to Arts, Manufactures, and Medicine, than any other branch of knowledge; hence, changes, to be useful, should be such as are required by urgent necessity, and are likely to command general acceptance by their reasonableness and expediency. After all, it must be remembered that these changes are not in the *facts*, but in a supposed improvement in the mode of expressing them; and if only partially adopted, they necessarily lead to confusion. Reasoning from the past to the present, it is not too much to infer that a student of Chemistry must be prepared for a new crop of systematic names, and a new classification of elements and compounds, every ten years.

"Our intention in the preparation of this volume has been, not to furnish a Treatise on the Science, but to provide the student, and the general reader, with a plain introduction to the subject. With ample materials at our disposal to produce two volumes in place of one, we have studiously endeavored to compress within these pages, a selection of the more important facts and doctrines of Modern Chemistry. We have adopted for the explanation of these facts, that simple chemical language which has found acceptance in the Schools and Colleges of Great Britain, France, and Germany, as well as in the best treatises on the Science.

"In addition to the general properties of bodies, we have attached to the description of each substance, a summary of its most important characters, with an account of the special tests required for its detection. The student will thus have in this book a Manual of PRACTICAL CHEMISTRY. As an adjunct to this branch of the Science, the subject of PRACTICAL

TOXICOLOGY has been introduced in reference to the most important *poisons*, and the processes for their detection. We have also treated, as fully as our space would permit, the chemical principles on which PHOTOGRAPHY is based, and have given some practical rules for the guidance of those who wish to apply their chemical knowledge to this interesting art.

"Having been engaged in teaching Chemistry in this Metropolis, the one for a period of forty, and the other for a period of thirty years, it has appeared to us that, in spite of the number of books already existing, there was room for an additional volume, which should be specially adapted for the use of students. In preparing such a volume for the press, we have endeavored to bear in mind, that a student in the present day has much to learn, and but a short time at his disposal for the acquisition of this learning. An eminent writer has truly observed, that the whole circle of the Sciences is required to comprehend a single particle of matter; but *ars longa, vita brevis*. If a Medical Student has before him only a few years for acquiring a knowledge of at least eight sciences, the efforts of those who contribute to the literature of these sciences should be directed to the elucidation of the most important facts and principles, omitting altogether those details which are either of a controversial nature, or are not yet established on a satisfactory basis. In reference to this book, it may be considered by some, that we have assigned too little, and by others, too much, space to our subject. This, however, is a question of opinion, on which persons may reasonably differ. We have taken that which seemed to us to be the proper course; and we trust we have so dealt with the principles and practice of CHEMISTRY, that the contents of this book will prove useful to the general, as well as to the professional reader."

"*NOTE.*—The limits of this work have not allowed us to occupy our space with a separate essay on PHYSICS. We have, however, described the more important Physical with the Chemical properties of bodies. For further details, we refer the reader either to Peschel's *Elements of Physics*, translated by West, or to the *Elements of Natural Philosophy* of the late Dr. Golding Bird.

"We have followed the example of the late Dr. Turner and other writers of repute, in excluding pictorial illustrations. Students of the present day are well acquainted with the shapes of air-pumps, gas-holders, flasks, and retorts. Those who require this aid to their studies, will find in the illustrated catalogues of dealers in Chemicals, more correct representations of apparatus, than those which are commonly met with in treatises on Chemistry."

## Editorial and Miscellaneous.

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OHIO STATE MEDICAL SOCIETY.—This body holds its next session at White Sulphur Springs, on the 16th of June, 1863.

This popular watering-place seems to be a favorite locality with the physicians of the State for the meetings of the Society. This is not to be wondered at. The springs are situated in one of the most delightful regions of Ohio, and of easy access from every direction. Of themselves, the springs are said to be worth a visit to the place. They have now become a favorite resort, and physicians visiting them with their families will find every thing very agreeable. Mr. Wilson, the proprietor, will superintend in person the arrangements the coming season; and it is only necessary to announce this to inspire full confidence among former visitors that things will be attended to *secundum artem*.

The buildings, walks, lawns, gardens, etc., are very ample and in fine condition. It is hoped we may have a full meeting of the Society.

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AMERICAN MEDICAL ASSOCIATION.—It will be seen by the advertisement of Dr. N. S. Davis, Chairman of the Committee of Arrangements, that it has been decided to hold a meeting of the Association at Chicago the present year. The meeting of last year, it is known, was postponed on account of the troubles in the country. We are not acquainted with the reasons which have prompted the proposed meeting. We can see no difference between the circumstances of last and those of the present year. Troubles are still present, as formidable as ever.

In view of every thing, we are disposed to question the wisdom of the arrangement. Now is no time for a national meeting. Should the meeting take place, only a portion of the country can possibly be represented. Better have waited, we should say, another year.

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CANADA LANCET.—Since our last issue we have received the first number of this work. It hails from Montreal, and was commenced on the 14th of March last. It is published monthly. In

size it is very moderate. The mechanical execution is very good, and the contents give evidence of taste and ability on the part of those conducting it.

JOURNAL OF OPHTHALMOLOGY.—This is also a new candidate for public attention. It is published in New York, by Julius Homberger, M.D., Editor and Proprietor. The work, though pertaining to diseases of the eye exclusively, should be read by all those who have even occasionally to treat diseases belonging to this organ.

We place these works on our "Exchange List."

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MEDICAL DEPARTMENT OF THE UNIVERSITY OF PENNSYLVANIA.—At the annual commencement on the 14th of March last, the degree of M.D. was conferred on 78 candidates. The matriculants during the session numbered 319.

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JEFFERSON MEDICAL COLLEGE, PHILADELPHIA.—At the commencement held on the 10th of March, 1863, the degree of M.D. was conferred on 82 candidates. The number of matriculants for the session of 1862-'63 was 275.

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MEDICAL COLLEGE OF OHIO.—At the commencement held on the 2d of March last, the degree of M.D. was conferred by this institution on 27 candidates.

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MEDICAL DEPARTMENT OF THE UNIVERSITY OF BUFFALO.—At the recent annual commencement of this school the degree of M.D. was conferred on 24 candidates.

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UNIVERSITY OF MICHIGAN.—The catalogue of this institution contains the names of 250 students who attended the medical lectures at the session recently closed. The number who received the degree of M.D. was 39.

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HARVARD MEDICAL SCHOOL.—At the annual commencement on the 11th of March the degree of M.D. was conferred on 42 candidates.

MEDICAL DEPARTMENT OF THE UNIVERSITY OF NEW YORK.—At the commencement on the 5th of March the degree of M. D. was conferred on 56 graduates.

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STARLING MEDICAL COLLEGE.—The commencement of this institution was held on the 23d of February. The degree of M. D. was conferred on 36 candidates.

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*Large Glandular Tumor removed from the Neck of a Boy Eight Years of Age.* By D. W. CHEEVER, M.D. (Reported for the Boston Society for Medical Improvement, April 13, 1863.)—This tumor, which was about as large as two closed fists, had existed for twelve months, but had increased very rapidly in size in the last month. As it showed no signs of softening, but was steadily enlarging, and had begun to create dyspnoea by pressure on the nerves and trachea, it was deemed best to attempt its removal. The skin moved freely over it. A number of enlarged cutaneous veins ran over it in various directions. The tumor felt to the touch lobulated and movable, as if made up of an enlarged chain of lymphatic glands. It extended from near the middle line of the neck in front, back upon the edge of the trapezius on the left side, and above, from the lobe of the ear and angle and body of the lower jaw, down to, and beneath the clavicle. The left shoulder was depressed by it. The boy looked otherwise pretty healthy.

March 31.—He was etherized, and an incision made from just below the ear to near the cricoid cartilage, through the skin and platysma, disclosed a lobulated, hard, glandular mass lying mainly beneath, and partly behind the sterno-mastoid muscle. Contrary to expectation, it was found very adherent in all directions, and the lobules bound together by strong, fibrous tissue. Considerable time and care were requisite to divide the adhesions, which were too strong to yield to any thing but the edge of the knife. It was found necessary to divide the sterno-mastoid, and dissect aside the external jugular, which ran, somewhat displaced, over and through the tumor. The lower edge of the tumor extended beneath the clavicle, into and below the subclavian triangle. The base lay over the sheath of the carotid, which was necessarily exposed about two inches. Continuous dissection was required even to

the last adhesion, for they could nowhere be made to yield at all. There was considerable venous hemorrhage, but very little arterial. The flaps were brought together, and now, one fortnight from the operation, are nearly united, and the boy is doing well.

Under the microscope, the tumor was found to be composed of uniform cells, about two-thirds the size of the blood-corpuscle, filled with from four to six granular nuclei. There were a few spindle-shaped fibrous cells; but no larger cells, or evidence of any malignant disease.

Under these circumstances, I suppose it is to be regarded as a lymphatic glandular tumor of unusual size, and that there is no probability of its recurrence.—*Boston Med. and Surg. Journal.*

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*Researches on Henna.*—The author, a graduate of the School of Pharmacy of Paris, selected Henna as the subject of his thesis. Henna (*Lawsonia inermis*) is a plant known to the people of the East from the highest antiquity. The leaves are employed either as a medicine or in the preparation of certain cosmetics. Its flowers, possessing equal medicinal virtue, are used as an agreeable perfume. They are sold in Cairo, as the lilac is in Paris.

Henna is common in the East Indies at Malabar, Ceylon, &c., and in Arabia, Persia, and Egypt, where it is very abundant. The author admits of only one species, *Lawsonia alba*, of which there are two varieties, *L. inermis* and *L. spinosa*. The leaves are employed as a topical application to ulcers of the mouth, and for staining the feet, hands, and hair. This use is perhaps less the result of coquetry than to avoid certain skin diseases so common in hot countries. The leaves are also used for dyeing light-colored woods of a mahogany color. The fruit is considered emmenagogue.

Henna is furnished to commerce in the form of powder. Two sorts are distinguished: *Henna of Arabia* and *Henna of Egypt*, the latter least esteemed. The former is often adulterated with sand and Egyptian henna, so as to be about equal in dyeing value to the latter.

The author in his chemical examination has aimed at isolating the active coloring principle. Cold water does not extract it, but it is removed by boiling water. Ether does not remove it, but extracts the chlorophylle. Alcohol of 90 per cent. completely extracts it by percolation; and when the alcohol is distilled off

from the tincture, the syrupy residue exhausted by ether, and the residue again treated by strong alcohol, and evaporated, the active matter is obtained.

This principle is brown, of a resinoid appearance, and soluble in boiling water. It possesses the properties of tannin, such as blackening the sesqui-salts of iron and precipitating gelatin. It reduces oxide of copper in Trommer's test, and heat decomposes it with the evolution of crystalline needles, which reduce nitrate of silver. The coloring matter of henna is therefore a species of tannin, and the author has named it *henno-tannic acid*.—*Journ. de Pharmacie.*

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*Galvanism applied, by Aid of the Laryngoscope, to the Vocal Cords.*—The electric current has been brought to bear directly on the vocal cords by Dr. Morell Mackenzie, and two cases of functional aphonia have yielded to it immediately. One patient had completely lost her voice for two years, and had been in London Hospital for some months, where every remedy had been used in vain by Dr. Mackenzie. Cauterization of the larynx, blisters, and even the employment of galvanism externally, had all failed, but the application of galvanism directly to the vocal cords succeeded at once, and after a week the patient spoke as well as she had two years previously.

In the other case, where the loss of voice was of eighteen months' duration, and where every kind of treatment had been tried unsuccessfully in the London Hospital, the voice was immediately restored by galvanism directly applied to the vocal cords. Dr. Mackenzie has invented an instrument, by which the electric current can be set going, but does not pass beyond a certain distance till the point is introduced into the larynx, when a spring is touched, and the current reaches the vocal cords. Dr. Mackenzie recommends the remedy in the early stages of clergymen's sore-throat, before the perverted state of the nerves has led to follicular deposit.—*Med. Times and Gaz.*

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*Manufacture of Saltpetre.*—Saltpetre is obtained in the Mammoth Cave, Kentucky, and considerable quantities were obtained from this source during the war of 1812. It is derived chiefly from the excrements of bats, etc. Most of all the saltpetre which

is employed for the manufacture of our gunpowder comes from India. It is not known whether any saltpetre is now obtained from natural sources in the Southern States. If the secessionists were deprived of this substance entirely, they could not carry on a war. The nitrate of soda is very abundant in many parts of the world, and were it not so deliquescent, it would answer just as well for making gunpowder as nitrate of potash. The formation of natural saltpetre is a very slow process, requiring about two years to complete. During the French revolution 2,000 tons were made in one year in Paris; and were foreign supplies cut off, twice this quantity could be made in the same space of time in the city of New York with its present number of inhabitants. In Sweden each peasant who owns a house is bound by law to make a certain quantity of saltpetre every year for the use of the State. In Spain, Egypt, Persia, and especially India, vast quantities of this salt are made annually; and it is not only a source of great profit but of warlike power to Great Britain.—*Scientific American.*

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*On Chestnut-Leaves in Hooping-Cough.* By GEORGE C. CLOSE, of Brooklyn, N.Y.—I wish to call the attention of the members of the Association to an article not recognized in the *Pharmacopœia*, and the use of which as a medicine has only recently come to my knowledge. This article is the leaf of the common chestnut-tree (*Castanea vulgaris*).

Having a child whom I supposed to be affected with incipient hooping-cough, I asked a prominent physician of New York, who has had an extensive practice for more than thirty years in the city, what he thought was the best remedy for hooping-cough. He answered, "Chestnut-leaves are by far the best remedy I have ever met with." Upon this, I immediately commenced giving to the child an infusion of the leaves made with boiling water and sweetened with sugar. She drank it freely and without objection, the taste not being unpleasant. The cough, which had continued for two weeks, and was evidently growing worse previous to giving the remedy, was immediately relieved, and after two or three days ceased entirely, and has not returned, though several months have passed.

Since making this trial, when asked by customers, "What is good for hooping-cough?" I have advised them, if they had no

physician in attendance, to try the leaves. In several instances after trying them, they have reported to me that "they acted like a charm," and gave immediate and great relief.

I have also heard of cases of adults, who were affected with that kind of spasmodic cough which is sometimes caused by some (perhaps slight) source of irritation in the throat, being immediately relieved by the same remedy.

As I have occasionally calls for chestnut-leaves, I asked a person who applied for them a few days since for what purpose he used them. He replied, as a remedy for hooping-cough, for which they were very good, and that they often relieved other kinds of cough also. This shows that their use is becoming somewhat popular as a domestic remedy.

A very extensive use of an article is required, however, to test its real value as a remedy, and I only present the foregoing facts as warranting, in my judgment, further trials of the leaves.

I also present a specimen of the dried leaves procured green and cured by myself, and a sample of the fluid extract made from the powdered leaves in the usual way, using diluted alcohol as a menstruum.

Although the use of chestnut-leaves as a remedy is new to me, it may not be to all the members present; and if any of them can give further information upon the subject, I hope they will do so for the benefit of the Association.—*Proc. Am. Pharm. Assoc.*, 1862.

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*Purity of Frozen Water.*—M. Robinet has made a variety of experiments to ascertain how water is freed from saline impurities by congelation, and his results go to show that the small amount of lime and magnesian salts in potable waters is forced out in the act of freezing as completely as the more soluble salts present in sea-water. Frozen water, he says, is so far purified that it may in most cases be used for chemical purposes in place of distilled water. In reference to this, M. Martens adds, that in his photographic excursions among the Alps he found that he could always use the waters from the glaciers instead of distilled water, but that dissolved snow did not answer.

Dr. Rudorff has also made experiments on the freezing of saline solutions (*Bericht d. Akad. der Wissensch. zu Berlin*, 1862, s. 163). He employed the platino-cyanide of magnesium, the solution of

which is colorless; but he found that when the solution was frozen so far that the water left was not enough to hold the salt dissolved, crystals of the well-known beautiful appearance were formed. Other curious results were observed with a supersaturated solution of sulphate of soda. When such a solution was cooled below the freezing point, and the formation of ice prevented, it was found that a piece of ice dropped in determined the formation of ice, while a crystal of the salt caused the formation of crystals of the salt. A very small piece of the salt dropped in with ice caused the separation of the whole of the salt. He noticed, too, that the lowering of the temperature produced an alteration in the constitution of the solution. For instance, when a solution of the blue salts,  $\text{CuCl} + 12\text{HO}$ , was frozen, the unfrozen water contained the green salt,  $\text{CuCl} \times 4\text{HO}$ . Other curious results will be found in the paper referred to.—*Chemical News, London.*

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*Statistics of the Globe.*—The following curious facts are stated by the *Abeille Médicale*: The earth is inhabited by 1,288 million of inhabitants, viz., 369,000,000 of the Caucasian race; 552,000,000 of the Mongolian race; 190,000,000 of the Ethiopian; 1,000,000 of the American Indian; and 200,000,000 of the Malay races. All these respectively speak 3,064 languages and profess 1,000 different religions. The amount of deaths per annum is 333,333,333, or 91,954 per day, 3,730, per hour, 60 per minute, or one per second. The loss is compensated by an equal number of births. The average duration of life throughout the globe is 33 years. One fourth of its population dies before the seventh year, and one-half before the seventeenth. Out of 10,000 persons only one reaches his 100th year: only one in 500 his eightieth, and one in 100 his sixty-fifth. Married people live longer than unmarried ones; and a tall man is likely to live longer than a short one. Until the fiftieth year women have a better chance of life than men; but beyond that period the chances are equal. Sixty-five persons out of 1,000 marry; the months of June and December are those in which marriages are most frequent. Children born in Spring are generally stronger than those born in other seasons. Births and deaths chiefly occur at night. The number of men able to bear arms is but one-eighth of the population. The nature of the profession exercises a great influence on longevity; thus out of 100

of each of the following professions the number of those who attain their 70th year is : Among clergymen, 42 ; agriculturists, 40 ; traders and manufacturers, 33 ; soldiers, 32 ; clerks, 32 ; lawyers, 29 ; artists, 28 ; professors, 27 ; and physicians, 24, so that those who study the art of prolonging the lives of others are most likely to die early, probably on account of the effluvia to which they are constantly exposed. There are in the world 335 millions of Christians, 5 millions of Jews, 600 millions professing some of the Asiatic religions; 160 millions of Mohamedans, and 200 millions of Pagans. Of the Christians, 170 millions profess the Catholic, 76 millions the Greek, and 80 millions the Protestant creeds.

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*On Pure Pepsin, by M. R. Bruecke.*—Pepsin can be precipitated from its solutions by agitation with cholesterin, phosphate of lime, or animal black ; dissolved in water containing phosphoric acid, it can also be precipitated when neutralized with lime water, and is contained in the precipitate of phosphate of lime without being in combination with that salt.

On these facts, M. Bruecke has based a new process for the preparation of this important substance ; he has obtained it in a state of purity unknown to this time, and which permits him to rectify a good number of statements in regard to it in the treatises.

Two recent hogs' stomachs are digested in weak phosphoric acid, at the temperature of 100 F., which detaches the mucous coat in fragments. The solution is filtered, and the residue again digested at the same temperature. The filtrate should be clear, and yellow prussiate should not indicate albumen. Lime water is now added until the neutralization is nearly complete as tested by litmus, the precipitate collected, expressed, and dissolved in water containing hydrochloric acid. The clear solution is again precipitated by lime water, redissolved by hydrochloric acid and filtered.

Into a flask, sufficiently large to contain the liquid, a funnel with a long beak is introduced, and into it a solution of cholesterin, prepared cold, with a mixture formed of four parts of alcohol of 94 per cent. and one part of ether. By contact with the acid liquid the cholesterin separates in very fine particles and rises to the top of the liquid ; when the coagulum acquires the thickness of about two centimetres, the funnel is removed and the liquid shaken

quickly and frequently, by which the pepsin is removed from solution by the cholesterin; afterwards filter, wash the filter with acid water and then with pure water, till the washings lose their acidity and reaction with nitrate of silver. Now in treating with ether, the cholesterin is dissolved whilst the adhering water forms an opaque layer with the pepsin, which is agitated repeatedly with fresh portions of ether, until nothing remains but an aqueous liquid from which the adhering ether passes off, and leaves a transparent solution of pure pepsin.

When acidulated with dilute hydrochloric acid, this liquid possesses energetic digestive properties, dissolving fibrine readily in an hour.

As has been remarked, that pepsic liquid is far from partaking of the reactions which are usually considered the characteristics of pepsin. Thus it is not affected by any of the reagents which indicate albumen, as per example by nitric acid, tincture of iodine, tannin and bichloride of mercury. This last point is of great importance, since the pepsin analyzed by M. Schmidt was prepared by precipitation with bichloride of mercury.

Nitrate of silver renders the liquid lightly opaline. Bichloride of platinum occasions a sensible troubling; it is precipitated abundantly by the acetates of lead, even in the presence of free acetic acid. It follows from this that our ideas of pepsin ought to be modified and its analysis made.—*Jour. de Pharm.*, Dec. 1862.

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*Congenital Lachrymal Fistula.*—J. R., aged 6½, was brought to the Hospital for Sick Children, for an opening over the right lachrymal sac, as large as a pin's head; it had existed since birth. There was no obstruction to the lachrymal passage either in the eyelid or nose. A probe could easily be passed downwards through the fistula into the lower nasal meatus. Caustic applied to the edges and the actual cautery failed to close the opening, and the boy left off attendance after an unsuccessful attempt to cure the fistula by paring the edges and uniting them with metallic suture.—*Med. Times and Gaz.*, March 28th, 1863.

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*Congenital Contraction of Anal Orifice.*—A girl, a few months old, came under care at the Hospital for Sick Children, for a mal-

formation, which, Mr. Smith said, was not unusual, though almost unrecognized.

On March 7, it was brought, with suspicion of having calculus, though its symptoms were great pain and straining, and difficulty in defecation. On examination, the anal orifice was found to be so minute as to account for the symptoms complained of. The orifice was about the caliber of a No. 6 catheter.

Mr. Smith said that on the next visit he should treat this child as he had done others with the same malformation, and he hoped with the same success. The plan hitherto adopted is to make an incision at the anal margin, in the middle line towards the coccyx, and, if necessary, on either side as well, and to tell the mother to insert from time to time a piece of oiled sponge pretty tightly screwed up so as to expand.—*Med. Times and Gaz.*, Mar. 28th, 1863.

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*The Hypophosphites.*—*Hypophosphate of Lime.*—To one Troy pound of freshly-burned lime, add  $1\frac{1}{2}$  gallons (wine measure) of hot water and  $\frac{1}{4}$  lb. phosphorus. Boil them together in a water bath, adding the phosphorus piece by piece, until it is all decomposed; which will require upwards of 24 hours. It should be made in a new three-gallon tin oil-can, with a mouth not exceeding 2 inches in diameter, which must not be obstructed; and the operation be performed in the open air. After filtering, pass carbonic acid through the solution, until a portion of the precipitate thrown down is redissolved. It is now to be refiltered, and evaporated with a heat not exceeding 140 degrees Fahrenheit. Any heat above 220 degrees, in the first boiling, decomposes the hypophosphites. Carbonic acid is most cheaply generated from chalk and sulphuric acid.

If the remedy is to be prescribed in solution, all that will be necessary will be to drive off the carbonic acid and filter; when the dose would be a teaspoonful in milk, three times a day.

*Hypophosphate of Soda.*—Is made by adding carbonate of soda (sal. soda) to the solution of hypophosphate of lime, so long as it yields a white precipitate: using great care not to add it in excess; then filter and evaporate, or give as before. This salt is much pleasanter to the taste than the former. A good way would be not to add quite enough of the carbonate of soda, then the two salts would be in combination; a favorite manner of prescribing them.

When faithfully prepared according to the above directions, the hypophosphites will be found well worthy of a trial in Phthisis in all its stages; and to be far superior to any purchased article, in point of expense and purity.

Dr. Churchill says it must be discontinued, should it cause any feeling of fullness in the head, giddiness, singing in the ears, or bleeding at the nose, however slight.

It may be given with the food. I often direct it to be taken in the tea or coffee, where it cannot be detected.—*Canada Lancet.*

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*The Turkish Bath.*—Clothed in a loose dress, the bather is conducted into a heated room, where he sits until accustomed to it, his body soon becoming covered with perspiration. He is next led into a vapor bath of much higher temperature (115° F.); where reclining on a marble slab, he undergoes a slow process of shampooing, which consists in pressing and kneading the flesh, and stretching and relaxing the joints. The quantity of cuticle that peels off during this operation, surprises one who has not witnessed the process. It necessarily leaves the skin extremely clean. The bather is finally conducted to a recess, which is supplied with fountains of hot and cold water, where he washes himself with soap, or has it performed for him as his taste directs. The feeling of languor, supervening after a Turkish bath, renders the short period of repose allowed him on a couch, extremely agreeable.

*The Turkish Bath in Lunacy.*—Dr. Power, of the Cork Lunatic Asylum, says, that owing to the introduction of this form of bathing in that institution, more than double the number of cures have been produced, than in any other asylum in the British Isles.

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*Fracture with Dislocation of the Spine.*—John Lynch, æt. 32, a healthy laboring man, received, on the morning of the 31st December last, a severe injury from a large beam, weighing, he says, upwards of a thousand pounds. It struck him on the shoulder and back, prostrating him insensible, in which condition he was admitted into the Montreal General Hospital, under Dr. Mc-

Callum, who, on examination, found fracture with dislocation of the eleventh and twelfth dorsal vertebræ, the former being depressed nearly an inch, and the corresponding prominence of the twelfth being very marked. On returning consciousness, he suffered from the most excruciating pain in the thighs, and had lost all power over the lower half of his body. Preparations were at once made to reduce the dislocation; to effect this, the upper part of the body was fixed by passing a sheet around the back, and beneath the axillæ, and another being arranged around the pelvis; gradual and powerful extension was made, steady pressure being at the same time exerted over the lower and projecting portion of the spinal column. The dislocation was thus reduced without deformity, and gave immediate relief to the pain, but did not affect the paraplegia. Splints were applied to the vertebræ for a time. The paralysis of the bladder and sphinctus, so troublesome after the accident, has gradually disappeared, but up to the present, February 10th, the paraplegia remains unchanged.—*Canada Lancet.*

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*The Flathead Indians.*—The Flatheads extend over a wide range of country from 130 miles up the Columbia river to its mouth, and along the Pacific coast and the Straits of De Fuca, Puget's Sound, and Canal Diaro, to near the mouth of Frazer's river; as well as on Vancouver's Island. . . . . During Mr. Paul Kane's travels among those tribes he saw hundreds of children undergoing the process of flattening the head, and thus describes the mode of procedure. The infant is strapped to the cradle-board, which is carefully covered with moss of finely-frayed fibres of cedar-bark, and is fitted with a head-board which projects beyond the face, so as to protect it from injury. In order to flatten the head, a pad, made of a piece of skin stuffed with soft cedar-bark, is laid on the infant's forehead, and on the top of this a slab of hard bark, with the smooth side under. This is covered with a piece of pliant deer-skin, and is bound tightly by means of a leathern band passing through holes in the cradle-board, while the head is supported and kept in an immovable position by a pillow of grass or frayed cedar-bark placed under the back of the neck. This process commences immediately after the birth of the child, and is continued

for a period of from eight to twelve months, by which time the head has assumed the flattened or wedge-shaped form, which constitutes the ideal of Chinook or Cowlitz grace. Another process is by means of a square piece of leather, with thongs attached to the four corners, placed over a pad on the forehead, and secured tightly to the board. Other pads are placed under the head, and at its sides, according to the special form which it is desired to give it. Mr. Kane remarks: "It might be supposed, from the extent to which this is carried, that the operation would be attended with great suffering, but I have never heard the infants crying or moaning, although I have seen the eyes seemingly starting out of the sockets from the great pressure. From the apparent dullness of the children whilst under the pressure, I should imagine that a state of insensibility is induced, and that the return to consciousness occasioned by its removal, must be naturally followed by the sense of pain." The brain in its process towards maturity seems partially to recover a less abnormal form, especially where the pressure has been applied so as to produce the elevated wedge-shape, with the breadth of the whole mass presented in front and rear. Mr. Kane was led to the conclusion that this violent process in no degree injures the health, as from inquiries made by him it did not appear that the mortality among the Flathead children is greater than among other Indian tribes. The evidence that it leaves the intellect unimpaired, rests on more absolute proof. The Flathead tribes are in the constant habit of making slaves of the neighboring roundheaded Indians, whom they treat with great barbarity; and though living among them, these are not allowed to flatten or modify the form of their infants' heads, that being a distinguished mark of freedom, and a badge of aristocratic descent. They look with contempt on the whites as a people who bear in the shape of their heads the hereditary mark of slaves. They are, moreover, acute and intelligent, have singular powers of mimicry, and have been noted for very retentive memories: being capable of repeating passages of some length, and with considerable accuracy, when recited in their hearing. It would, indeed, appear, that alike in the time of Hippocrates and in our own day, an idea has prevailed among those who practiced the strange barbarian usage of remodeling the human head, that they thereby not only conferred and added grace to its form, but that they contributed no less to the mental superiority of those among whom this has ever been the

peculiar symbol of aristocracy, and the mark of the dominant race. If it did, in reality, produce an opposite effect, and tend either to mental inferiority or absolute insanity, it would lead to speedy and inevitable revolutions among those tribes where the helots are rigorously excluded from the practice. But neither among the Peruvians, nor the ancient or modern North American tribes, is there any evidence of the normal cranium having thus practically demonstrated its superiority over the deformed or flattened skull.

—*Prehistoric Man*, by DANIEL WILSON, LL.D.

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*On the Natural Constituents of the Healthy Urine in Man.* By Rev. SAMUEL HOUGHTON.—Professor Houghton dissents from the view of Barrau and others, that the nitrogen extracted from the body is discharged in two nearly equal parts, one *per vesicum et anum*, the other *per cutem et halitum*; and is of opinion that under ordinary circumstances this element passes off, with the exception of a small quantity in the feces, entirely in the urine. The prime object of the writer is to estimate the quantity of urea excreted under the varying conditions of physical and mental labor; the amount of urea being regarded as a measure of the waste of tissues involved in each species of work. In order to do this, observations were made on various persons, some chiefly engaged in mental, some in bodily labor. The conclusion (it is impossible in our space to give the complicated materials and means by which the author arrives at them) are these :

“1. The quantity of urea passed per day by men in health varies with their food and occupation, the latter being the principal cause, and regulating the other.

“2. Men employed only in manual or routine bodily labor are sufficiently well fed on vegetable diet, and discharge on an average 400 grs. of urea per day, of which 300 grs. are spent in vital and 100 grs. in mechanical work. This conclusion is in conformity with the experience of the mass of mankind employed in manual labor, in all ages and countries.

“3. When the work is of a higher order, a better quality of food must be supplied, sufficient to allow of a discharge of 533 grs. per day of urea, of which 300 grs. are spent, as before, in vital work, and 233 grs. in mental work, and the mechanical work necessary to keep the body in health.

"4. The quantity of urea discharged per day varies also with the weight of the individual, which influences the vital and mental work.

"5. The habits, weight, and occupation of the individual enable us to account for a range of the diurnal quantity of urea, varying from 300 to 630 grs. per day; and this discharge may be confidently predicted when the habits and weight are known.

"When, in any case, the discharge of urea exceeds that calculable by the preceding data, it must be attributed to ill health, and most generally to that most fatal of all diseases to which man is liable—anxiety of mind—a vague and unscientific expression, which, however, denotes a most real disease.

"This fact alone would render the preceding investigation of importance to the physician, as it enables him, in a given case, to pronounce whether there is an excess of urea or not, and a consequent waste of the system. I have shown that the mere quantity will not decide this question, as from 300 to 630 grs. may be discharged by persons in perfect health, according to their peculiar work and physical conditions."—*Dublin Quart. Journ. of Med. Sci.*

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*On the Preparation of Crystallizable Acetic Acid.* By M. TILLMANS.—Take six parts of acetate of soda in crystals, fuse the salt in its water of crystallization, and evaporate to dryness, and melt the dry mass by a carefully increased heat. The residue weighs but half as much as the original salt. This is distilled with five parts of the ordinary sulphuric acid to dryness. The product is apt to contain sulphuric acid, which is removed by a little litharge and redistilling which gives the acid pure. By exposing the product to the cold till it crystallizes, and draining off the liquid portion, by which the remainder is left as a monohydrate, six parts of acetate of soda gives  $2\frac{1}{2}$  parts of glacial acetic acid.—*Journ. de Chim. Med.*

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#### OHIO STATE MEDICAL SOCIETY.

The Annual Meeting of the Ohio State Medical Society will be held at the White Sulphur Springs, commencing on Tuesday, the 16th of June, 1863. Every arrangement will be made for the comfort and convenience of those in attendance.

EDWARD B. STEVENS, *Secretary.*

# O H I O

## MEDICAL AND SURGICAL JOURNAL.

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### Original Communications.

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*Fourteenth Annual Convention of the American Medical Association, held in the City of Chicago, June 2d, 3d and 4th, 1863.*

The Fourteenth Annual Convention of the American Medical Association commenced in this city to-day. At the opening of the session 141 gentlemen were in attendance. It is expected that the medical skill of the country will be ably represented, and that the session will be one of unusual interest and practical value in its relation to the sanitary wants of the country. The meetings are held at Bryan Hall. The opening session was called to order at eleven A. M. by the first Vice-President, Dr. Wilson Jewell, of Penn., supported by Vice-President Dr. A. B. Palmer, of Michigan. The Secretaries, Drs. S. G. Hubbard, of Conn., and H. A. Johnson, of Illinois, were also present. Prayer was offered by the Rev. R. L. Collier, pastor of the Wabash avenue M. E. Church.

The welcome address was delivered by Dr. N. S. Davis, of this city, Chairman of the Committee of Arrangements, to the following effect. Dr. Davis welcomed the members to the city of Chicago. They had heretofore met in cities at the East, where years of improvement had wrought more perfections than in Chicago, but here were all things pertaining to those cities in their incipiency. He could point to our great granaries, our great commercial interests, our schools, our universities, and our every element of civilization, where recently the Indian and untutored life was rife, with pride. New as Chicago is, she is not behind the age. The same patriot-

ism, friendship, and harmony of interests exist, and he welcomed them to all the hospitality which Chicago could afford.

Which address was followed by the following report of the Committee of Arrangements:

The unusual duties and responsibilities which have devolved upon the committee, since the meeting at New Haven in 1860, seem to require a brief explanation, in addition to the usual report, on this occasion. Early in the year 1861, the usual notices for the regular meeting on the first Tuesday in June, of that year, were issued, and the committee had made all the preliminary arrangements for its accommodation, when the sectional animosity and wickedness which had been threatening the peace of our country for several years, culminated in an open, unjustifiable, and monstrous rebellion. In the midst of the universal excitement which followed, the committee received numerous letters from active members of the Association, some of them embodying the action of local medical societies, all asking earnestly for a postponement of the general meeting for one year. The letters were from every section of the Union, including the cities of Boston, New Haven, New York, Troy, Albany, Philadelphia, Cincinnati, Louisville, Nashville, St. Louis, and Detroit. A special meeting of the committee was held, and all these letters, together with similar sentiments expressed in the medical periodicals, were submitted for examination.

Although there is nothing in the constitution or by-laws of the Association authorizing either the officers or the committee of arrangements to postpone a regular meeting, yet the extraordinary condition of the country, and the apparent unanimity of sentiment in favor of such action, constrained the committee reluctantly to issue a notice that the annual meeting would be postponed until the first Tuesday in June, 1862. About the time for issuing the notice for the meeting in 1862, the severe battles of Belmont, Fort Donelson, and Shiloh, followed each other with such results as to require the attention and active assistance of large numbers of the profession in the north-west, and at a meeting of the committee the chairman was instructed to correspond with members of the Association in the several cities heretofore named, and obtain further advice before issuing any notice. The instructions were complied with, and of a large number of letters received in reply, all but two earnestly recommended another postponement. At a subsequent meeting the committee being satisfied that these letters afforded a

fair index of the sentiments of the profession generally, unanimously instructed the chairman to issue notices, announcing a further postponement of the meeting until the first Tuesday in June, 1863. These successive postponements were fully endorsed by almost every medical journal in the country. No further action was taken by the committee until February, 1863. On the thirteenth of that month the chairman of the committee received official notice from the secretary of the Medical Society of the State of New York, that at the regular annual meeting of the Society held in Albany during the first week in that month, a resolution had been adopted unanimously in favor of holding a meeting of the American Medical Association at the regular time and place, specified in the last notice of postponement, namely, in Chicago, on the first Tuesday in June, 1863, and requested the committee of arrangements to issue the customary notices for such meeting without delay.

About the same time the *American Medical Times* in New York, and the *Medical and Surgical Reporter* in Philadelphia, strongly recommended the same course of action. The committee was convened on the evening of the 14th of February, and being satisfied that the foregoing action of the New York State Medical Society, and of the medical periodicals named, indicated a general change of sentiment in favor of resuming the regular meetings of the Association, a vote was passed unanimously instructing the chairman of the committee to issue the usual notices for the annual meeting of the Association, and to engage the necessary hall for its accommodation. Accordingly notices were immediately printed, and before the first of March copies had been mailed to all the medical periodicals in the country; to all the members of committees, both standing and special; and to many other members of the Association. The committees have been gratified to find that the call for the present meeting met the warm approval of nearly all the medical periodicals in our country, while in only *one* have they observed a decided expression of disapproval. Whether the action of the committee has been right or wrong, judicious or injudicious, we know that it has at all times been actuated by one single desire, namely, to comply with the actual wishes of the profession, and to perpetuate the existence of the Association with ever increasing activity and usefulness. In the spring of 1861 persevering efforts were made by the committee to effect an arrangement with the several important railroad lines to make some commutation of fare

to such members as should attend the proposed meeting of the Association in this city. During the present season, these efforts were repeated, but in both instances the uniform answer of railroad officers was: that they were prohibited by direct conventional agreements from entertaining any proposition of the kind. The committee have been informed that at a meeting of railroad officers in Buffalo, on the twenty-ninth day of April last, such influences were brought to bear as caused them to make the *canal enlargement convention*, now in session in this city, an exception to the rule against commutation of fares, while all other applications for the same purpose were denied. For further information on this subject, the committee refer to an announcement which will be made at an early hour by the local secretary of the Association. Notwithstanding all the disagreements which have existed, the committee are happy to announce that the number of delegates and permanent members whose credentials have already been furnished, and their names enrolled, is such as to indicate a large and profitable meeting. The list of names will be read at the calling of the roll by the secretary.

In conclusion, the committee recommend that after the adjournment of the meeting this afternoon, the sessions of the Association be continued each day as follows:

General session from 9 A. M. to 1 P. M.

Afternoon sessions in sections from 3 P. M. to 6 P. M.

Seats will be reserved in the gallery for ladies during all the general session in Bryan Hall. All of which is respectfully submitted.

Signed

N. S. DVAIS,  
THOS. BEVAN,  
E. ANDREWS,  
H. W. JONES,

*Committee.*

Dr. Catlin, of Connecticut, moved that the report be accepted and approved, which was carried.

The Secretary, Dr. Hubbard, of Connecticut, called the roll of delegates and permanent members, who had registered their names, only a very few being absent.

VERMONT.—Drs. J. N. Stiles, Lewis Emmens.

MASSACHUSETTS.—Drs. Benj. Cutter, Appleton Thorne, Edmund Barton, James P. Lynde, Ebenezer Stone, P. J. Kendall, B. E.

Cotting, John Homans, John C. Dalton, M. D. Southwick, E. R. Abbe, John Green.

CONNECTICUT.—Drs. Stephen G. Hubbard, L. N. Beardsley, R. H. Catlin, A. W. Barrows.

NEW YORK.—Drs. Henry G. Davis, Guido Furman, Alden March, Daniel P. Bissell, James S. Whaley, Thomas C. Brinsmade, C. C. F. Gay, Jenks. S. Sprague, Edward Stork, Edmund S. F. Arnold, E. W. Cherry, W. N. Blakeman, Howard Townsend, H. Nicholl, E. Tobie, H. S. Downs, C. C. Wyckoff, Alf. Underhill, John H. Griscom, L. B. Cotes, Julius Homberger, C. H. Harvey, James McNaughton, Daniel Holmes.

NEW JERSEY.—Drs. W. Pierson, Jr., D. M. Sayre, John Blain, Isaac S. Cramer.

DELAWARE.—Drs. H. F. Askerd, James Cooper.

PENNSYLVANIA.—Drs. Wilson Jewell, W. Mayburry, E. Wallace, B. Richardson, John R. Thomas, E. M. Mason, W. L. Richardson, S. N. Troth.

VIRGINIA.—Dr. J. C. Hupp.

OHIO.—Drs. W. S. Battler, J. M. Taggert, W. W. Jones, A. H. Agard, K. G. Thomas, S. O. Almy, L. N. Lawson, W. B. Davis.

INDIANA.—Drs. B. S. Woodworth, A. M. Vickery, A. J. Erwin, A. P. Ferris, L. D. Personett, James Ferris, S. A. Freeman, L. D. Glazebrook, James F. Hibbard.

MICHIGAN.—Drs. A. B. Palmer, E. A. Ezzery, H. O. Hitchcock, S. D. Richardson, Lewis Davenport.

ILLINOIS.—Drs. E. L. Holmes, Geo. K. Amerman, Edward Andrews, John Ten Broeck, C. R. Parks, T. D. Fisher, Geo. W. Hall, Dav. Prince, E. Andrews, N. Wright, W. O. Chamberlain, J. P. Rouse, E. A. Steele, A. Fisher, M. J. Johnson, J. H. Hollister, D. Pierson, M. F. Derrith, S. Wirkester, J. D. Rose, Henry Winz, Charles Gorham, S. W. Noble, Ira Hatch, T. F. Worrell, T. P. Haller, H. A. Johnson, R. Spitler, G. Pasli, H. Noble, D. M. Parker, Orrin Smith, A. J. Conine, T. K. Edmiston, J. J. Lulee.

WISCONSIN.—Drs. Chas. L. Stoddert, H. Adams, Harman Van Dusen, E. S. Carr, Geo. D. Wilbor.

IOWA.—Drs. J. W. H. Baker, Samuel C. Lay, Joseph Sprague, D. L. McGuggin.

KANSAS.—Drs. D. W. Stormont, C. A. Logan.

TENNESSEE.—Dr. W. K. Bolinz.

## ARMY AND NAVY DELEGATES.

Dr. C. C. Cox, Baltimore, Med. Dept., U. S. A.; Dr. G. Simpson, Baltimore, Med. Dept., U. S. A.; Dr. A. R. Terry, Chicago, Med. Dept., Marine Hospital; Dr. John B. Porter, Chicago, Pension Office Examiner; Dr. Henry Palmer, York, Penn., York Army Hospital; Dr. M. K. Taylor, Keokuk, Iowa, General Hospital, Keokuk; Dr. Ralph Isham, Chicago, U. S. Hospital.

Dr. H. A. Johnson, one of the secretaries, invited the delegates to attend the National Canal Convention, now in session in this city, and thereby obtain free tickets home.

Here a recess of ten minutes was allowed for each State to nominate a delegate, and constitute the committee on nomination.

The following gentlemen were chosen on the nominating committee:—Drs. J. N. Stiles, Vermont; John Homans, Massachusetts; L. N. Beardsley, Connecticut; James McNaughton, New York; John Blain, New Jersey; H. F. Askew, Delaware; W. S. Battles, Ohio; James F. Hibbard, Indiana; William Mayburry, Penn.; H. O. Hitchcock, Mich.; D. W. Stormont, Kansas; John C. Hupp, Virginia; J. H. W. Baker, Iowa; H. Van Dusen, Wisconsin; H. Noble, Illinois; W. K. Bolinz, Tenn.; C. C. Cox, Maryland.

Dr. Joseph Simpson was chosen in behalf of the U. S. A. On motion of Dr. N. S. Davis, of Illinois, the Acting President, Dr. Jewell, of Pennsylvania, read his Annual Address on retiring from office.

The following officers were elected for the ensuing year:—*President*, Alden March; *Local Secretary*, Guido Furman. *Committee of Arrangements*: Drs. Henderson, Blakeman, Markoe, Finnell, Flint, Arnold, Griscom.

The next meeting will be held in New York.

## RETIRING ADDRESS OF DR. JEWELL.

Dr. Wilson Jewell, acting President of the Association, then delivered his retiring address. He remarked that, since we last assembled in convention two years ago, as the representative body of the medical profession in this country, the delightful union of our Congress has been unexpectedly interrupted. Events the most thrilling in the history of any nation have occurred. The government of the United States, the mildest and most beneficent

the world ever knew, has been assailed by an armed force. Our once happy and prosperous people have been plunged into an unnatural, causeless, and unprecedented rebellion, and thousands of families have been involved in distress and ruin. The most endeared relations in life have been severed; the strongest ties of parental and fraternal affection alienated, while our Union, the palladium of our safety as one people, now trembles in the balance. It was not strange if the troubrous element had found its way into our counsels, yet he had hope still that the present struggle would be gloriously ended by a restoration of the Union. Their cause was based on the eternal principles of civil and religious liberty, and could not fail,

The speaker then turned to the subject which was most intimately connected with the objects of the convention, and spoke of the noble part taken in the struggle by the devoted members, who, amid the thunders of battle and the din of arms, worked firm and self-possessed to mitigate the horrors of the strife, and risked being killed or taken prisoners of war rather than desert the path of duty. Theirs was no warrior's ambition; they were stimulated by no wish save that of alleviating human suffering. Many of their members were in the army, and some slept the sleep of death. First and highly valued among them was their respected President, Eli Ives, whose knowledge and experience had rendered him so valuable a medical practitioner, and whose private virtues endeared him to all. The usefulness of the Association was one of the great aims of their late President, and he predicted great things of its future.

The orator then took a retrospective view of the progress of the Association, and spoke of the signs, in its present condition and standing, which point to a bright and influential future. He quoted from many eminent medical men in which the influence of the Association was spoken of and hints for improvement given. He would, however, direct their attention to another subject, not that he loved Cæsar less, but Rome more. He would speak of Hygiene, a science which bears no modern date, but claims its origin in the antediluvian age, is now so little understood, and presents an illimitable field for research. The fearful responsibilities of their calling should stimulate them to a thorough course of study in all that pertains to the preservation of health, the extension of the term of existence, and the alleviation of disease, where prevention

was rendered impossible. There was room to hope that the American Medical Association would throw out a light which, in the medical world, would equal the refulgence of that bright ray which shone out from the retreat of the Wittenburg student, and dissipated the darkness which until then brooded over the theological firmament. Yet this illumination could ensue only upon a careful study of the laws of Hygiene. Not that the subject was incompatible with the design of the Association; it had done great service in that department, and time would fail to tell the aid rendered by it in the past. But the vestibule of the Hygienic temple alone had as yet been attained. The method of curing disease had heretofore attracted not too much of attention, but it had perhaps thrown into the background those sanitary considerations which will teach how to prevent disease by conformity to the laws of health. This was a reform much needed, but there seemed to be a perpetual obstruction presented to its progress, and a private prejudice in the popular mind against it. He would propose a two-fold method whereby the evil might be remedied. It was to elevate Hygiene as a branch of scientific study, and give it a distinct chair in the medical colleges. He would constitute it as a curriculum of study which was essential to the reception of a diploma. He counseled also the adoption of some more popular and successful plan than had otherwise been pursued, for enlightening the public mind on the relations of preventive measures to the health of the people. The etiology of disease was the basis of the science of preventive medicine. This was being better understood than formerly, and one of the good fruits springing out of the present unhappy struggle would be the elimination of a multitude of facts bearing on the relations of military discipline to military health, and the consequent efficiency of the soldier. These facts were of incalculable value, and would exercise a largely beneficial influence upon the health of future ages. Already a work of this kind has been authorized by the General Government, which will contain an elaborate classification of military diseases, and the influence of hygienic regulations thereupon. The time was probably not far distant when each State would have its bureau of health, and recognize the indissoluble relation existing between sanitary conditions and moral developments, as well as on the physical organism. Already two cities of the Union had taken vigorous action in this matter, and the Garden City might well claim the credit of having set the

example of aiming to insure civic healthfulness. He recommended that the word "Hygiene" should be written in letters of gold on the escutcheon of the Association.

On motion of Dr. Sprague of New York, the thanks of the Association were tendered to the retiring President for his eloquent, patriotic, and scientific address.

Dr. Davis, chairman of the Committee of Arrangements, presented the following list of candidates for permanent members for election: Walter Hay, Ill.; S. W. Bicknell, Wis.; E. W. Jenks, Mich.; S. Earle, Ill.; W. W. Sedgewick, Ill.; V. S. Hurlbut, Ill.; Thos. Bevan, Ill.; John McAllister, Ill.; P. H. Haydock, Ill.; N. P. Peterson, Ill.; H. N. Hurlbut, Ill.; E. C. Gardner, Vt.; John Bartlett, Ill.; Henry Durban, Ill.; R. C. Hamill, Ill.; Webster Jones, Ill.; all of whom were elected.

The following were invited to participate in the deliberations of the Convention: A. L. Marion, Ill.; L. D. Glazebrook, Indiana.

The President appointed Drs. Pierson of Ill., Beardsley of Conn., and Coulter of Mass., to draft resolutions expressive of the sense of the Association respecting the death of the late President, Dr. Ives.

The Association then adjourned to three o'clock.

#### AFTERNOON SESSION.

TUESDAY, 3 P.M.

The meeting was called to order at 3 P.M., and the Committee of Arrangements read the following names of delegates who had arrived since the morning:

Dr. Wm. M. Huntington, Vt.; Drs. Jas. Dunlapp and Lyman Bartlett, Mass.; Drs. Ralph Deming and Horace Burr, Conn.; Dr. B. L. Delano, N. Y.; Dr. Danl. Holmes, Penn.; Drs. W. C. Hill and C. McDermott, Ohio; Drs. Hiram Mann, A. L. Mimam, Van C. Secor, H. W. Jones, D. P. Brengle, Thos. Beven, H. N. Hurlbut, Silas Earle, T. D. Fitch, John McAllister, S. R. Heven, S. T. Hume, J. S. King, E. C. Gardner, C. C. Lattimer, Simon Clarke, Wm. H. Byford, H. B. Brown, D. E. Foote, Jos. Perry, H. C. Robbins, J. A. Brown, D. F. Crouse, C. D. Rankin, Wm. Robinson, N. P. Peterson, M. Parker, Ill.; Dr. E. W. Jacke, Mich.; Drs. S. W. Bucknell, John G. Meecham, Wis.; and Dr. T. J. Mendenhall, Missouri; Dr. Tiffin Larke, Kansas; R. H. Gilbert,

U.S.A., Ft. Monroe, Va. (Med. Dept. U. S.), and Dr. Wm. Jayne, Dacotah Territory.

The acting President appointed the following members to constitute the committee on voluntary communications: Drs. Marsh of N. Y., Mayberry of Penn., Byford of Ill., Mendenhall of Miss., and Langford of Ohio.

The report of the Treasurer was read by Dr. Askew, of Delaware, the Treasurer being unable to attend. He reported that, owing to the unsettled state of the country and the advanced price of printing, it would be necessary to print only such papers as were of great value, and to condense those as much as possible, or the treasury could not bear the cost. The proceeds of volumes sold were \$1,982 25; balance on hand last year, \$597 61; balance on hand this year, \$504 21. Report adopted.

The Committee of Publication reported the result of their labors during the year and the number of volumes now in their possession. Report accepted.

#### DIARRHŒA ADIPOSA.

Dr. Griscom, by leave, presented a report of a case of *Diarrhœa Adiposa*, which had recently been presented in the New York Hospital, under his care. A Crimean soldier was attacked with severe dysentery during the war, which continued a year, and was followed by the above named disorder, consisting of discharges of oil from the bowels, which has continued ever since (about six years) with occasional intervals, to the average extent of two and a half ounces daily. This exceedingly rare case (for the substance resembles pure olive oil, and hardens when cool to the consistence of butter) excited much interest in professional circles, and induced the Doctor to examine all the medical records within his reach for other cases that may have occurred; and the result was a table, included in the paper read, of twenty-six cases, including his own, which were all that appear to have been reported during the last two centuries in England, France, and this country. Two other cases, only, are known to have been seen in the United States: one reported by Dr. Goold of Boston, and one by Dr. Wells of Connecticut, in the *N. Y. Medical Times* of February, 1854. One point of remarkable interest, in connection with Dr. Griscom's case, was the discovery that this peculiar discharge, which the

patient declares to be a cause of much weakness of body (although otherwise in pretty good health), is almost entirely arrested by the exhibition daily of from six to eight ounces of alcoholic stimulus, whisky seeming to act as a consumer of the oil, from whatever source it is derived.

The table of twenty-six cases, collected by Dr. Griscom, gives a resumé of the circumstances attending each; such as the amount and character of the discharge in each, the age and sex of the patients, the attendant symptoms, the result, and the autopsic appearances when dissections were made.

Of the twenty-six cases, fourteen died, and of four the issue was not mentioned by the reporters. Eight recovered entirely, or were so far improved as to experience no inconvenience from the symptom. Among the fourteen fatal cases, eight were found to have diseased pancreas, and four were not examined after death.

The conclusion of Dr. Griscom's paper was a brief review of the cases in connection with criticism of various theories which have been proposed by the reporters of the cases, and other authors. The writer chiefly referred to is Claude Bernard, the author of the able "*Mémoire sur le Pancréas*," who therein maintains that the oil is all derived from the food, and appears with the faecal discharges, in consequence of disease of the pancreas suspending the pancreatic secretion; it being the province of that fluid, according to his views, to emulsionize the oily ingredients of the ingesta, and prepare them for the further stages of digestion.

Several cases of this phenomenon having occurred in connection with diseased pancreas, Bernard used them as proofs of his views; but, as stated by Dr. Griscom, omitting the mention of those cases which gave no other evidence of diseased pancreas. Bernard further asserts that it is only in *chronic* and not acute disorders of the pancreas that the discharges of oil occur; whereas, according to the cases collected by Dr. Griscom, it appears that in several instances the symptom lasted too short a time to admit the idea of a chronic disease of that organ; and moreover, the complete recovery of some cases is an additional objection to the idea of Bernard.

Without attempting a solution of the knotty question, except to hint that the liver may possibly, on further investigation, be found to have some influence in the production of the unique excretion, the Doctor expressed the belief that with the lights of modern

science impelling further researches into the arcana of the digestive functions, these will not much longer remain as such.

In illustration of the oleaginous character of the discharge from his patient, he lighted a candle, and exhibited a cake of soap prepared with it, which was referred to the practical medicine.

#### REPORT OF NOMINATING COMMITTEE.

The Committee on Nominations presented the following partial report: For *President*, Dr. Alden March of N. Y. For *1st Vice-President*, Dr. Jno. Cooper of Del.; *2d Vice-President*, Dr. David Prince of Ill.; *3d Vice-President*, Dr. C. C. Cox of Md.; *4th Vice-President*, Dr. E. S. Carr of Wis.; which report was accepted and adopted.

The Chair appointed the following to escort the President to the chair: Drs. Brinsmade of N. Y. and Wallace of Penn. To escort the *1st Vice-President*, Drs. Griscom of N. Y. and Pearson of N. J.; the *2d Vice-President*, Drs. Cutter of Wis. and Edmiston of Wis.; the *3d Vice-President*, Drs. Thomas and Wickersham of Ill.; the *4th Vice-President*, Drs. Hollister of Ill. and Richardson of Mich.

The newly-elected President briefly returned thanks for the honor conferred. Next in order were the reports of Special Committees.

#### REPORT OF COMMITTEE ON PRIZE ESSAYS.

The report of the Committee on Prize Essays was read by Dr. D. L. McGugin of Iowa. He reported that only one essay had been published which was worthy of the prize medal. It is an inquiry into the properties and physiological uses of Veratrum Viride, with notices of its alkaloid, Veratria, as derived by certain processes. He considered the essay as worthy of publication and of the prize.

Dr. Lawson moved that the prize be awarded to the author, and the paper forwarded to the Committee of Publication.

Dr. Cox moved that the essay be referred to a special committee, of which Dr. McGugin shall be chairman, to read the essay and report at some future time.

The motion of Dr. Lawson prevailed, and the name of the author was then announced—Samuel R. Percy, M.D., Professor of Mate-

ria Medica and Therapeutics in the New York Medical College. The prize is one hundred dollars.

A communication was received by Dr. Davis from Dr. E. R. Squibb, of New York, chairman of the committee on "the practical workings of the United States law relating to the inspection of drugs and medicines," stating that he could not attend, and offering to report next year. Agreed to.

Dr. A. K. Gardner, of New York, presented a paper on the use and abuse of pessaries, but the reading was postponed till the next morning.

Dr. McGugin, on Puerperal Tetanus, etc., reported progress and asked to be continued for another year, which was granted.

Dr. C. C. Cox, on Hygienic Relations of Air, reported progress and asked to be continued. Granted.

Report on Necrology is continued, Dr. C. C. Cox as chairman.

#### THE HUNTER MEMORIAL.

The committee on the Hunter memorial reported that the sum of \$357 had been raised, in one dollar subscriptions, towards the Hunter fund, a portion of which has been forwarded to London. The smallness of the contribution was imputed mainly to the fact that the monument would stand on British soil, and the indifference felt by England about the present national trial had checked enthusiasm. The report was contained in a letter from Dr. Bowditch, which was received and placed on file. It was also decided that the account be closed, and the balance forwarded to England.

Dr. Davis reported, from the Committee of Arrangements, the following gentlemen as permanent members: Drs. Daniel B. Bremgle, Manchester; Van Courtland Secord, Galena; J. B. Samuel, Carrollton; David Dodge, Chicago; James S. King, Lemont; D. F. Crouse, Mount Carroll; all of Illinois. The nominations were confirmed.

#### THE CALOMEL ORDER OF THE SURGEON-GENERAL, U.S.A.

Dr. Lawson, of Ohio, called attention to the recent order of the Surgeon-General prohibiting the use of mercurials and tartarized antimony by the army and surgical corps. He moved that the Association express its disapprobation of the order. The subject was referred to a committee, with instructions to inquire into the

facts and report. The committee consists of one member of each State. The Chair appointed Drs. Lawson, Dalton, Stiles, Catlin, Brinsmade, Pearson, Ashew, Wallace, Hupp, Woodworth, Wing, Palmer, Van Duzen, McGugin, Mendenhall, Logan, and Bolinz.

#### THE RELATIVE RANK OF ARMY SURGEONS.

Dr. Cox called attention to the want of a recognition of army surgeons, and urged that relative rank should be accorded to them. At present it was not possible for a surgeon to rise above the rank of Major. He therefore offered the following resolutions :

*Resolved*, That a committee of five be appointed by the Chair to draft a memorial to Congress asking the enactment of a law by which Surgeons in the service of the United States Army may be accorded relative rank in the same.

*Resolved*, That each medical gentleman present be urgently invited to use every proper influence with the members of Congress from his respective district, to urge the passage of a law favorable to this object at the ensuing session of Congress.

The resolutions were seconded by Dr. McGugin in an able speech, in which he reviewed the relative responsibilities of the Surgeon and Commander, and spoke of the injustice perpetrated in the case of the former. The resolutions were discussed by several other delegates, and were finally adopted.

Remarks were then made by Dr. Arnold, of New York, on the necessity of making medical provision for railroad accidents. He distributed printed copies of papers read by him before the New York State Medical Society and the Academy of Medicine.

#### SECOND DAY.

WEDNESDAY, 9 A.M.

The Association was called to order at 9 A.M., by the President, Dr. Alden March, of Albany, N. Y.

The minutes of the preceding day were read by the Secretary, and approved. The Chairman of the Committee of Arrangements read the names of members and delegates who registered their names since the last meeting. A large number of additional names were announced as having arrived, including a large number of physicians and surgeons of this city. He also proposed the following gentlemen as members, by invitation : Drs. J. H. Foster,

W. G. Millar and J. A. Brown, all of Illinois; and the following gentlemen as permanent members: Drs. Tiffin Finke, Kansas; W. C. Hall, Ohio; Hiram Wanger, Ill.; H. K. Dean, Ind.; H. C. Robbins, Ill.; E. J. Duffield, Ill.; W. Jaynes, Dacotah Terr.; C. M. Clerk, Ill.

On motion of Dr. Jewell of Penn., Dr. J. Macgowan, an eminent medical missionary from China, was invited to take a seat with the Association. Dr. Macgowan being desirous of addressing the Association on the state of medicine in China, it was resolved, on motion of Dr. Griscom, of New York, to invite Dr. Macgowan to do so, during the first half hour of the afternoon session.

The reports of committees being in order, on motion, that of the Committee on Medical Education was postponed until the afternoon session.

The Committee of Nomination made a further report, in which Baltimore was recommended as the place of next meeting of this Association. Accepted. Dr. H. S. Downs of N. Y., moved to amend, by substituting the word New York for Baltimore. Considerable discussion arose, various members proposing different places. The member from Maryland, Dr. Cox, advocated the feasibility of appointing the next meeting at Baltimore, as a national measure. It was for the interest of the Association and the country to hold the meeting *as far south as possible*. The effect of holding it at Baltimore would be a healthy one upon that city and its medical interests. Men of wealth and influence would open their doors and extend warm hospitality to the members of the Association.

Dr. Furman, of New York, stated that the delegation from the New York County Medical Society, the New York Pathological Society, the New York Academy of Medicine; from the City Hospital, Bellevue Hospital, the University Medical College, College of Physicians and Surgeons, and the Bellevue Hospital Medical College, and various delegations from other societies and institutions from New York city, had been directly instructed to tender their invitation, and hoped that the Association would act courteously and deliberately, and with wisdom.

Dr. Davis, of Illinois, followed Dr. Furman, with an urgent request to accept this invitation extended by our New York brothers, and made a very animated, patriotic, and common-sense address.

## THE ASSOCIATION TO MEET IN NEW YORK.

The question finally resolving itself into a choice between Baltimore and New York city, a vote was taken. The vote being doubtful, a count was called for, with the following result: New York, 68—Baltimore, 43. Dr. Downe's amendment was adopted. On motion of Dr. Cox, of Maryland, the vote was made unanimous.

On motion of Dr. Griscom, of New York, the remainder of the report, concerning the officers of the next meeting, committee, etc., was referred back to the committee, for reconstruction, rendered necessary by the substitution of New York for Baltimore.

Dr. Davis, of Illinois, read a communication from Dr. Bowditch, of Mass., respecting the necessity for the organization of an ambulance system for the army, accompanied by a pamphlet upon the subject, which was distributed among the members.

Dr. Homan, of Mass., moved that a committee of one from each State represented, be formed to memorialize the President of the United States upon the subject referred to by Dr. Bowditch, which was passed, and the Chair appointed the following gentlemen to constitute such committee: Drs. Emmans, Dalton, Griscom, Hubbard, Pearson, Jr., Cooper, Trotter, Happ, Almy, Hibbard, Palmer, Clarke, Carr, Sprague, Mendenhall, Logan, Bolinz, and Surgeon Simpson. Dr. Griscom being the chairman thereof.

On motion of Dr. Underhill, of N. Y., a resolution of thanks was passed unanimously to Dr. Wilson Jewell, late acting President, for the able and dignified manner in which he has presided over the deliberations of the Association.

Dr. Hibbard, of Ind., offered a resolution, requiring the appointment of a committee to urge the compulsory examination of every person in the United States. It was passed, and referred to the Section of Hygiene.

## DEATH OF DR. ELI IVES, LATE PRESIDENT.

The committee on resolutions concerning the death of the late Dr. Eli Ives, late President of this Association, reported the following resolutions:

Whereas it has pleased the Divine Ruler of all events, to take from our midst one of the most distinguished and venerable members of our profession, Eli Ives, of New Haven, Conn., the late

President of this Association, a man full of years and honor; and whereas it becomes us at all times to bow with submission to the righteous will of the Almighty, believing that He doeth all things well: Therefore,

*Resolved*, That in the death of Eli Ives, this Association has lost a firm friend and ardent advocate for the elevation and dignity of the science of medicine, the profession one of its most highly gifted members, and society at large one of its brightest ornaments.

*Resolved*, That while we mourn the dispensation that has deprived us of the presence and counsel of our late venerated President, we condole with his bereaved family, in the severe loss they have sustained.

*Resolved*, That a copy of the foregoing preamble and resolutions be forwarded to the family of the late Eli Ives, signed by the President and Secretary, as an expression of the sympathies of this Association. All of which was adopted.

#### SECTIONS ABOLISHED.

On motion of Dr. Byford, of Ill., the session of sections was suspended for this session, in order that the voluntary communications might be read; it was also moved that all papers that have been referred to sections be read in general session, and the meetings in sections be dispensed with.

Dr. Mayburry, of Penn., chairman of the committee on voluntary communications, presented a paper by Dr. Anderson, of Ill., on "Diathesis, in its surgical relation," which was read by the author. The paper of Dr. Anderson called up Dr. Hibbard, of Ind., who combated in rather a lengthy speech some of the principal features presented. Dr. A. replied in support of his arguments, developing from his experience the truth of the position which he assumed. Other members participated in the discussion, after which the paper was approved of and referred to the committee of publications.

The meetings of the sections having been abolished, the association appointed Drs. Hibbard, of Ind., Jewell, of Penn., and Griscom, of New York, to constitute the committee on compulsory examinations, which had previously been referred to the section on Hygiene.

On motion of Dr. Davis, of Ill., the association adjourned to 3 P. M. for the transaction of general business.

## AFTERNOON SESSION—SECOND DAY.

## ACCLIMATIZATION OF CINCHONA PLANT.

The minutes of the morning session having been read and approved, Dr. J. Macgowan, Medical Missionary in China, according to a resolution passed this morning, was invited to address the association on the state of medical science in that empire. He explained to the meeting the professional bearings of his proposed scientific and industrial expedition to the unknown parts of Eastern Asia. Investigation in relation to the history of epidemics, into the *materia medica*, and into the ethnology of those lands, cannot fail to elicit many facts which promise to be of incalculable value to medicine and the collateral sciences. Dr. M. further expressed a hope that the association would take some measures to induce the Haytian Government to undertake the acclimatization of Cinchona trees (quinine plants.) He gave an account of the success of the Dutch in Java, and of the English in India, and fully believes that in St. Domingo these invaluable plants might be readily cultivated, and thus secure additional supplies of this great remedy in fevers.

Dr. Macgowan has been in correspondence with the Haytian Ambassador in Washington on the subject, and solicits the influence of the profession, in urging the institution of the necessary experiments in those portions of America north of the equator where the soil and climate seem to afford sufficient encouragement.

In the course of his remarks, the speaker gave an account of the standing of the medical profession in China and Japan, of their medical literature, etc., and also stated the remarkable facts that they have made many discoveries in the use of remedies for certain diseases, in some cases either actually the same or very similar to those discovered and used here.

On motion of Dr. Cox, of Maryland, Dr. T. O. Edwards, of Chicago, was invited to a seat on the platform.

On motion of Dr. Hubbard, of Conn., Dr. Jonathan W. Brooks, of Chicago, was elected a permanent member.

The Chairman of the Committee of Arrangements read a list of newly arrived delegates since the last report. He also proposed the following gentlemen as permanent members:—Drs. I. B. Bushnell, Ind.; C. Truesdale, Ill.; W. R. Fox, Ill.; L. F. Warner, Ill.; M. Parker, Ill.; which were elected.

Drs. L. T. Havens, of Wisconsin, and C. J. Taggart, of Wisconsin, were invited to seats.

#### REPORT OF COMMITTEE ON EDUCATION.

Dr. Cox, of Maryland, presented from the Committee on Medical Education the report which had been postponed from the morning session. He reviewed the past history of the profession in this respect, and the absence of proper attention to the subject. Many valuable suggestions as to needed improvements were also made. After the rendering of this report, the Committee submitted the following resolutions, which, after discussion, were adopted:

*Resolved*, That a thorough preliminary education in English, Latin, mathematics and physics, constitutes an essential pre-requisite to the admission of a student of medicine into the office of a medical preceptor, or as a matriculant of a respectable medical college.

*Resolved*, That the advancement of medical education demands a more extended and symmetrical course of instruction in the colleges, and a more thorough and impartial examination for the degree of doctor of medicine than at present prevail.

*Resolved*, That Medical Jurisprudence and Hygiene are highly important branches of Medical Science, deserving the careful consideration of all medical teachers and schools.

*Resolved*, That societies for medical improvement—State, district and county—are important auxiliaries to the advancement and promotion of science, and are therefore highly recommended by this body, as valuable levers in the cause of medical education.

The Committee appointed to make a report upon the recent order of the Surgeon-General, prohibiting the use of mercurials and tartarized antimony by the army surgical corps, made a majority report through Dr. Lawson, of Cincinnati, and an entirely antagonistic minority report by Dr. Woodworth, of Indiana. The former strongly favored the use of these remedial agents in the army, and the latter as strongly discountenanced their use there. Each report was backed up by resolutions rigidly endorsing the language of the report. After an animated discussion, on motion, adjourned.

#### THIRD DAY.

THURSDAY, 9 A. M.

The Association was called to order by the President. After a partial reading of minutes, the further reading was dispensed with.

On motion, Dr. Greene, of Mass., was invited to a seat on the platform.

The following gentlemen were admitted permanent members by invitation :

Isaac Snyder, Jackson, Mich.; R. B. Treat, Janesville, Wis.

The following were admitted members by invitation :

Granville S. Thomas, Joliet, Ill.; J. S. Pashley, Osceola, Ill.

Dr. Cox, of the Army, announced the sudden departure of Dr. Wilson Jewell, of Pennsylvania, caused by receiving intelligence of the unexpected death of a son, and offered a resolution of condolence, which was adopted.

Regular business being in order, the reports of Committees were taken up.

Dr. Gilbert, of the Army, in behalf of the Committee on the Extinction of the Aboriginal Races, reported progress, and, on motion, the Committee was continued another year.

The President having announced that the order of the Surgeon-General, U. S. A., debarring calomel and tartar emetic from the use of army surgeons, and which was previously referred to a committee, was in order, by consent of the Association the committee on the subject offered a substitute for the resolutions introduced yesterday.

There is a strong feeling manifest in the Association against this famous Order No. 6, of Surgeon-General Hammond, and it has more than once been referred to with expressions savoring more of opposition than approval.

Pending the discussion, previous to the vote, Dr. Cox, of the Army, said substantially as follows:

While the Association had the right to protest against the order of the Surgeon-General, he wished it to remember that the order referred exclusively to the corps of Army Surgeons under his control, and had no reference to the use of those drugs in private practice. The order originated in the abuse of calomel by a number of incompetent surgeons in the army, appointed by the Governors of the several States, who consider the *liver* the packhorse of the human system. The Medical Bureau of the United States comprises men of science, who understand how far the evil has been perpetuated and the necessity of correcting its abuses. The fact that other mercurials have not been interfered with, shows how

great the necessity that exists for an order so apparently sweeping, and which the Association deems so arbitrary.

He did not desire to protract the debate, but felt it due to his position to say something before the final vote should be taken. He was not up either to defend or condemn the order. In a long practice he had seen the abuse of calomel in improper hands, as well as its benefits from its legitimate and judicious use. He wished a discrimination to be made between the propriety of the order and the motives of the Surgeon-General. That gentleman's high character and motives are not to be questioned in this or any other public body. He deserved the thanks of the profession for the wholesome interest he had taken in the subject.

Dr. Cox's position called up several members, in reply. Calomel had fallen under the ban of an "unwise, unnecessary, and professional" order, and that order received animadversion, ridicule, and unstinted opposition. The discussion became general, and while some desired to place no obstacles in the progress and encouragement of our armies in the field, their opinion of the order was of a character that culminated in the following resolutions, which were adopted :

*Resolved,* That from evidence within our possession, we can but entertain the conviction that the Surgeon-General of the U. S. Army has been led into expressions, in Order No. 6, which will convey errors respecting the abuse of calomel in the army, and we feel called upon to protect, so far as in our power, the reputation of the intelligent and self-sacrificing medical officers from the implied imputation of such general mal-practice.

*Resolved,* That while regarding spanæmic medicines, particularly calomel and tartar emetic, when freely administered to soldiers in the field, the camp, or the hospital, where unfavorable hygienic conditions so commonly cause depression and asthenic conditions of the system, as being very often productive of injuries ; yet that these articles, when judiciously employed, are useful, is a proposition according with the general opinion of the profession ; and as abuse of an article is no just argument against its proper use, it is, in the judgment of this body, to be regretted that the object of correcting these abuses was not sought to be effected by an order of caution on the subject, and by dismissing from the service those disregarding such caution, and not by the extraordinary and, as we think, unjustifiable course of attempting to prevent, entirely, the

use of articles, though liable to abuse, as are all powerful agents, yet which are well established in professional confidence as capable of useful application.

(Signed)

L. M. LAWSON, *Chairman.*

The entire report, giving a history and details of the subject, in the same spirit, was also adopted.

On motion, it was resolved that a copy of the above resolutions be forwarded to the President of the United States, the Surgeon-General U. S. A., and the Secretary of War.

The Nominating Committee reported the following officers of the Association for the present year :

*Secretaries*—Drs. H. A. Johnson, Ill.; Guido Furman, N. Y.

*Committee of Arrangements*—Drs. James Anderson, N. Blakeman, T. M. Markoe, T. C. Finnell, Austin Flint, Jr., E. S. F. Arnold, J. H. Griscom.

*Committee on Prize Essays*—Drs. D. F. Condie, Pa.; E. Wallace, do.; Wilson Jewell, do.; E. R. Peaslee, N. Y.; Alfred Stille, Pa.

*Committee on Medical Education*—Drs. J. C. Dalton, N. Y.; M. L. Linton, Mo.; John Frissell, Va.; Howard Townsend, N. Y.; W. H. Byford, Ill.

*Committee on Medical Literature*—Drs. L. M. Lawson, Ohio; J. L. McGugin, Iowa; William Mayberry, H. Noble, Ill.; John Homans, Mass.

*Committee on Publication*—Drs. F. G. Smith, Chairman, Pa.; Caspar Wister, do.; Ed. Hartshorne, do.; H. F. Askew, Del.; S. G. Hubbard, Conn.; H. A. Johnson, Ill.; Guido Furman, N. Y.

*Committee on Insanity*—Drs. Ralph Hills, Ohio; C. H. Nichols, D. C.; D. P. Bissell, N. Y.; S. W. Butler, Pa.; John S. Butler, Conn.

Dr. Lee, from the Committee on Medical Literature, reported progress, by letter, requesting permission to present his report directly to the Committee of Publication.

A report was received from the Committee on Voluntary Communications.

Dr. Dalton was excused from further serving as chairman of the Committee on the Ambulance Corps, and Dr. J. M. Warren was substituted.

Dr. N. G. Davis commenced reading a paper on "The American Method of Treating Joint Diseases and Deformities," which was

referred to the Committee of Publication, and its further reading suspended.

Dr. Homberger, delegate from New York, in behalf of Dr. Elsberg, of New York, showed some instruments for the treatment of diseases of the larynx, a "laryngoscopical mouth-piece," a laryngeal brush, a "sponge carrier," a porte-caustic, an insufflation-tube, a fumigating-tube, and an electropole. These latter six instruments have all a curvature of  $112^{\circ}$ , which Dr. E. found most efficient in carrying out the objects of laryngoscopical local medication.

#### RETROVERSION OF THE IRIS, ETC.

Dr. Homberger presented a case of "retroversion of the iris, dislocation of the lens into the anterior chamber, with complete detachment of the retina." He stated that such cases are exceedingly rare, and that three only are known to him reported by Von Ammon in the Archives of Ophthalmology. There was no apparent cause for this anomaly, which came on on the right eye without inflammation, and caused what was considered sympathetic irritation of the left eye. The eye was enucleated, and some months afterwards the patient came with a trembling iris on the other eye and considerably impaired vision. The ophthalmoscopic examination did not give a satisfactory result. A luxation of the lens had to be supposed on the ground of the trembling of the iris, though the ophthalmoscope did not reveal the margin of the bud as a black line, within the pupillary space. The application of atropine would evidently have been unjustifiable under such circumstances, and the patient was directed to present herself before Dr. H. when the symptoms would aggravate.

Dr. H. asked the members of the Association whether a similar case had occurred in their practice, and concluded with some further remarks on the case on the inquiries of Dr. Alden March. Both communications were referred to the Committee of Publication.

The paper of Dr. Griscom, on a case of diarrhoea adiposa (read on Thursday afternoon), was, on motion of Dr. Furman, referred to the Committee of Publication.

#### SULPHITES OF LIME AND SODA AS DISINFECTANTS.

Dr. A. Fisher, of Illinois, presented a paper on the use of sulphites of lime and soda in the treatment of hospital gangrene,

phlebitis, erysipelas, and other zymotic diseases, and related a number of cases. The first was that of a lady: nearly the whole left leg was destroyed by sphacelus. It was necessary to amputate just above the knee; but little haemorrhage occurring, only three or four small arteries being necessary to tie; not a drop of blood was found in the femoral artery, and it was so contracted and filled with fibrin and pus that it was not ligated. The vein was also completely filled with a reddish substance, the product of inflammation. Under the use of 3 j. doses of the sulph. of soda in solution every six hours, the patient gradually improved; entire convalescence was established. The second case was of malignant (or blood poison) rheumatism. She took the sulph. of lime 3 j. every four hours for fourteen days, and no other remedy, with the exception of a pill consisting of lead and opium, for diarrhoea for a few days, was used. She commenced to improve in twenty-four hours, and continued so to do.

The husband of the second case was injured on the patella while the wife was ailing. The second day erysipelas commenced in the wound, extending up to the thigh, forming an abscess, which was opened, and the patient appeared to be relieved; but severe constitutional symptoms occurred in a few days, for which he took the sulphite of lime in 3 j. doses every four hours, and nothing else. In four or five days the recovery was perfect.

Dr. F.'s attention was first directed to the use of the sulphites in these cases by reading a review of an article "On Diseases depending upon Morbific Fermentation and their Treatment," by Dr. G. Polli, of Milan. Published in *Braithwaite's Retrospect* and taken from the *Dublin Quarterly Journal*, May, 1862. He gives a statement of Dr. Polli's views on the action of the sulphites by experiments on dogs, and states that he first came to use them by reading that article, and then gives three more cases. 1st. A child, three years old, with scarlatina and erysipelas, cured by a teaspoonful of the saturated solution of sulphite of soda every two hours for one week, the constitutional symptoms improving in twenty-four hours after taking it. 2d. A very bad case of phlebitis and erysipelas following typhoid fever and periostitis of the tibia. Cured by the sulphite of lime, though tinct. ferri muriat. was used, but with no good effect. 3d. A case of malignant metritis after an abortion at the second or third month. Cured by sulphite of lime alone: 3 j. every three hours for five or six days. He says that

the sulphites of lime and soda are well retained on the stomach, and produce no sensible effect for the first twenty-four hours, when the patient begins to improve in all respects. He thinks the sulphites of magnesia and potass may be as beneficial as the sulphite of soda and magnesia from Dr. Polli's experiments. He always used the pure sulphites, prepared by Dr. Squibb.

On motion, the paper was referred to a committee of three, of which the author is chairman, to continue his investigations and report again next year.

Dr. Cox, of the Army, offered two resolutions—one of thanks to the citizens of Chicago for their kindness and hospitality shown to members of the Association during its session here, and another of thanks to the retiring secretary, Dr. Hubbard, for his able and faithful services.

The amendments to the Constitution of the Association proposed at the last meeting, were called up, discussed, and rejected.

A complimentary resolution, by Dr. Happ, of Va., thanking the President and Secretary for their services, was adopted.

The following gentlemen, on motion of the Committee of Arrangements, were elected permanent members of the Association : L. H. Cary, Toledo, Iowa ; Horatio Hitchcock, Chicago ; L. F. Warner, Chicago ; L. P. Cheney, Chicago ; C. W. Shumway, Chicago.

Dr. N. S. Davis, of Ill., spoke of the use of sulphite of lime in erysipelas, and stated that in the last half of March and the first part of April, 1863, erysipelas was more prevalent in the city than usual ; and, as a consequence, several very severe cases, occurring among the poorer classes, were received into the Mercy Hospital.

They constituted the subject of several clinical lectures to the class attending the summer course of instruction in the Chicago Medical College (Medical Department of Lind University), thereby enabling the students to study the disease practically in all its stages. He related an aggravated case of erysipelatous inflammation of the face (except the chin), the ears, the mastoid spaces, and part of the scalp, occurring in an adult male patient, an interne of the Mercy Hospital of that city. The second, also an erysipelatous case, was an adult female in the same charity, the malady affecting the same portions of the body as in the preceding case. Case III. was that of another adult female in the same charity ; had miscarried when four months *enciente*. On the third day after her miscarriage severe uterine phlebitis established itself. All these cases were

treated very successfully by the use of sulphite of lime in 3 j. doses every three hours. The nourishment in all three cases was chiefly milk porridge and animal broths.

In commenting on these cases, it was not claimed that they were sufficient to establish the efficacy of sulphite of lime in the treatment of diseases dependent on blood-poisoning or degeneration. But they do show that the remedy may be given in large doses with perfect safety, and, taken in connection with the cases related by Dr. Fisher, it is rendered highly probable that the sulphites will be found exceedingly valuable in the treatment of a whole class of severe and often fatal diseases. On motion, the Society adjourned to three P. M.

#### AFTERNOON SESSION—THIRD DAY.

THURSDAY, 3 P. M.

The Convention assembled and was called to order by the President at three P. M. The minutes of the morning session were read and approved.

A letter was read from Dr. Russell, of Ohio, asking to be excused from further service on a special committee to report on "Stimulation in Fracture." Request granted.

A similar communication was also read from Prof. Sage, of Michigan, wishing to be excused from a special committee on Blood Corpuscles, and disposed of in the same manner.

Dr. N. S. Davis offered an amendment to the Constitution, providing for the appointment of one permanent Secretary. Under the rules of the Association, the amendment lays over one year. The Committee on Nominations reported the appointment of numerous gentlemen to act upon various matters that might come before the next annual meeting. The report was accepted, and committee discharged.

Dr. Hubbard moved an addition of one from each State be made to the Committee on Necrology. Carried.

The following resolutions were offered by Dr. Arnold, of New York, and carried :

WHEREAS, The railroad is fast becoming the great medium of land travel in all parts of the world; and whereas, in spite of all regulations and care, serious accidents are continually occurring, attended with loss of life, such being greatly augmented by the

total want of any local medical provision to meet such, as well as by the absence of any appliances whatever calculated to strengthen the hands of the surgeon: therefore be it

*Resolved,* That such medical provision shall be made by the railroad; and that by the diminution of suffering, as well as by the saving of life, while economy would accrue to the railroad companies, the interests of humanity would be greatly served.

Dr. Hibbard, of Indiana, offered the following amendment of the Constitution:

That the President and Vice-President of this Association elected each year, shall assume the functions of their respective offices at the beginning of the meeting of the year next succeeding their election.

Under the rule, the proposed amendment will lie over until next meeting.

Dr. McGugin, of Iowa, from the committee appointed to memorialize Congress on the subject of relative rank and pay of army surgeons, made a lengthy report, and, on motion, the report was accepted and adopted.

On motion of Dr. Griscom, it was ordered that the report be printed and distributed to the members of Congress, heads of departments, and others likely to influence action upon the subject.

Dr. Wing offered the following as an addition to the memorial, which was adopted:

*Resolved,* That it be recommended that, in carrying out the object of this memorial, every promotion shall be attended by a suitable examination into his qualification, and the merits of his military record.

Dr. Homberger, of New York, offered the following resolution, which was, on motion of Dr. Prince, referred to the Committee on Medical Education for the coming year:

*Resolved,* That the American Medical Association recommend to the Faculties of Medical Colleges in this country, to create Chairs of Ophthalmology, recently so importantly advanced by the invention of the ophthalmoscope.

On motion of Dr. Hubbard, of New York, the Association adjourned *sine die*.

*Seventeenth Annual Session of the Ohio State Medical Society.*  
Reported by E. B. STEVENS, M.D., Secretary.

OHIO WHITE SULPHUR SPRINGS, June 16, 1863.

The Ohio State Medical Society was called to order at 10 o'clock A.M. The President, Dr. J. W. Russell, in the chair; Dr. E. B. Stevens, Secretary.

On motion, the reading of the minutes of last year was omitted.

Dr. Reamy, Chairman of the Executive Committee, being absent, Dr. M. Dawson reported that all necessary arrangements had been made for the accommodation of the Society by Mr. Wilson, and moved that the order of business of the two past years be adopted for the present sessions of the Society.

On motion, the report accepted and suggestion adopted.

On motion, it was ordered that all the members present register their names at the Secretary's desk.

The President announced the following as the Committee on Nominations: Drs. Murphy, Beeman, Robt. Thompson, Hunt and Andrews.

Dr. Robt. Thompson offered the following:

*Resolved*, That this Society cordially invite all literary, scientific and professional gentlemen that now are, or may yet arrive at the "White Sulphur Springs" during our sessions, to take seats among us, as it may suit their pleasure and convenience.

Adopted.

The President appointed Drs. Kirtland and Scarff to fill vacancies on the Finance Committee, who subsequently presented the following report:

The Finance Committee beg leave to report that an assessment upon each member of \$1.00 be and is hereby made for the current expenses of the coming year.

C. P. LANDON,  
J. P. KIRTLAND,  
W. D. SCARFF,  
Finance Committee.

The report was received and adopted.

On motion, the order of business was suspended to allow the

Chairman of the Publication Committee to make the following report :

The Committee on Publication respectfully report that two hundred and fifty copies (250) of the Transactions for 1862 were published at an expense of \$154.05.

E. B. STEVENS, Chairman.

On motion, report received.

Dr. Landon offered a resolution that the Society do not wait longer for the report of the Nominating Committee, but proceed to nominate and ballot in open Society for officers for the ensuing year; which, after various attempts at amendment and ineffectual efforts to withdraw, was finally lost. And,

On motion, Drs. M. Dawson, M. Thompson and Hamilton, were appointed a committee to wait upon the Nominating Committee, with instructions to report forthwith.

The Committee on nominations made their report, and the Society proceeded to ballot with the following result :

*President*—W. P. Kincaid, of Neville.

*Vice-Presidents*—M. Dawson, of Royalton; D. S. Gans, of Cincinnati; David Noble, of Highland Co.; J. J. Hamill, of Newark.

*Secretaries*—E. B. Stevens, of Cincinnati; N. Dalton, of Logan.

*Treasurer*—J. B. Thompson, of Columbus.

*Committee on Admissions*—J. G. Kyle, T. L. Neal, R. L. Sweeney, C. P. Landon, A. Metz.

On motion, the sum of \$1.00 was ordered to be put to the credit of Dr. Belding, an amount paid Dr. Rickey, former Treasurer, and not credited.

The President appointed Drs. M. Dawson and P. Crume a committee to wait upon the President elect, inform him of his election, and escort him to the chair immediately after recess.

On motion, the Society took a recess until 2 o'clock.

#### AFTERNOON SESSION.

The committee conducted the President elect, Dr. Kincaid, to the chair, who acknowledged the compliment paid him by the Society in a few brief remarks.

The retiring President, Dr. Russell, then proceeded to deliver

his valedictory address, his topic being "The Means for Professional Advancement."

On motion, the address was referred to the Committee on Publication, with instructions to print.

The Standing Committees were called. The Committee on Medical Societies presented a lengthy report on the condition of the Societies auxiliary to the State Society, with considerations and suggestions for advancing the efficiency of the Society. On motion, referred to the Committee on Publication, with discretionary power to print.

The Constitution and By-Laws of the Mt. Vernon Medical Society were presented, and referred to the Committee on Medical Societies, who subsequently further reported, that having examined the same, they recommend the Mt. Vernon Medical Society to be admitted as auxiliary to the State Society. Report accepted and adopted.

The Secretary announced that arrangements had been made with the Little Miami, Columbus and Xenia, Hamilton and Dayton, Columbus and Cleveland, and Pittsburg, Columbus and Cincinnati Railroads, returning members in attendance on this Society and their families free.

On motion of Dr. Hamilton, the Secretary was directed to make acknowledgment to these companies for their courtesy.

The Special Committees were called, and a portion reported themselves in readiness; also several volunteer papers were announced.

The Chairman of the Committee on Obituaries stated that he should report before the adjournment of the Society, and expressed his regrets that individual members were so forgetful of their duty to co-operate in the contribution of materials for obituary notices.

Dr. Stevens reported that Prof. Blackman and himself had attended the Indiana State Society at its session last fall, representing this Society; that the Indiana Society was a live, working Society, and that it sent greetings to the Ohio State Medical Society.

Dr. Kincaid stated that no meeting of the Kentucky State Society was held last year, hence he had not attended as delegate from this Society.

The resolution offered this morning by the Committee on Nomi-

nations was, on motion, taken up and adopted, allowing \$100 a year as compensation to the Treasurer.

Dr. Gans offered the following :

*Resolved*, That hereafter the respective Special Committees on scientific subjects shall ordinarily be composed of but one member.

Adopted.

Dr. Stevens offered the following :

*Resolved*, 1st, That hereafter the regular annual election of officers shall be made the order of business at some deferred hour of the sessions, instead of at the opening, as is now the custom.

2d. And the nomination shall be made in open session of the Society, without the intervention of a committee.

Adopted.

The Secretary read a communication from Drs. Davis and Armor, of Dayton, in regard to the complaints made against Dr. Oliver Crook, and referred to them as a special committee at the last annual meeting. (See report on file.)

On motion, the whole matter referred to the Committee on Ethics, with instructions to report to-morrow morning.

On motion of Dr. Murphy, a committee of three was appointed to prepare a preamble and resolutions, expressing the sense of this Society, concerning "Circular No. 6" of Surgeon-General Hammond (being the famous calomel and tartar emetic order)—Drs. Murphy, Weber and Metz that committee. Pending its adoption, animated remarks were made by Drs. Murphy, Robt. Thompson, McBride, and others.

Adjourned until to-morrow morning.

#### SECOND DAY.

9 o'clock, A. M.

Dr. Kincaid, the President, in the chair.

The minutes of yesterday's proceedings were read, and, after some verbal amendments, adopted.

Dr. Conklin introduced Dr. R. E. Houghton, of the Indiana State Medical Society, who was, on motion of Dr. Crume, elected an honorary member of the Society, and was invited by the President to take a seat with us and participate in our proceedings. Dr. Houghton responded in a neat and pertinent address.

Dr. M. Dawson offered the following:

*Resolved*, That the thanks of this Society be and are hereby tendered to the retiring officers, for the able, dignified and courteous discharge of their several duties.

Adopted.

The Committee on Ethics reported back the papers in the case of Dr. Crook, for the action of the Society.

On motion of Dr. Murphy,

*Resolved*, That the action of the Montgomery County Medical Society be confirmed, and Dr. Crook be declared expelled from this State Society.

A warm debate followed, in which Drs. Murphy, Hamilton, Stevens, Andrews, Gans, the President and others participated. At length the motion of Dr. Murphy was withdrawn, and the whole matter was, on motion of Dr. Kyle, referred to the Committee on Ethics, with instructions to report immediately after dinner. The President appointed Drs. Reisinger, Andrews and Kyle, Committee on Ethics *pro tem.*

On motion of Dr. Stevens, Dr. Landon was appointed Treasurer *pro tem.* in the absence of Dr. Thompson.

On motion of Dr. Hamilton, the ladies were invited to be present at our sessions.

The reports of special committees were now called for, and Dr. Gans proceeded to read his report on Obstetrics, being chiefly devoted to the consideration of galvanic electricity as a parturient agent.

The paper was discussed by Dr. Robt. Thompson, Dr. Mitchell, Dr. Russell, Dr. Gans, Dr. Leonard, and Dr. Houghton of Indiana, and, on motion, referred to the Committee on Publication, with instructions to print, and the thanks of the Society extended to Dr. Gans for his able report.

Dr. Mitchell stated in his remarks that he was prepared to confirm the views of Dr. Gans from his own private experience, gave the particulars of an extreme case of uterine haemorrhage, in which he used electro-magnetism with prompt relief, together with other confirmatory experience.

Dr. Gans hoped it would not be sufficient to read a paper and have it printed, but that each member would be thereby stimulated

to give his own observations, and proceeded to give the details of several cases in obstetric practice, illustrating the views of his report.

Dr. Leonard wished to know of Dr. Gans if he regarded the contraction produced by electricity a *permanent* contraction, or does relaxation occur with the removal of the poles of the battery.

Dr. Gans replied that the contraction was an imitation of natural pain, and the agent was at hand to continue or renew at pleasure or necessity, or while the necessity continues.

Dr. Hamilton moved that Dr. Gans be continued to report at our next annual meeting his personal experience in the use of electro-galvanism in obstetric practice.

The President read the following communication from Dr. M. B. Wright, Chairman of the Committee on Prizes for Prize Essay of last year :

CINCINNATI, June 15, 1863.

DR. RUSSELL—*Dear Sir:* It is possible I may be prevented from being with you at the present session of the State Society, and I write hastily to say that the Committee on Prize Essay and Medal have deemed it best not to procure a medal at the present time in consequence of the high price of gold. It is to be hoped that before the next meeting of the Society a medal may be procured, creditable to the Essayist and the Society.

Respectfully,

M. B. WRIGHT,  
Chairman of Committee.

The Committee on "Circular No. 6" of Surgeon-General Hammond, appointed yesterday, presented through its chairman, Dr. Murphy, the following report :

The Ohio State Medical Society has read with profound regret Circular No. 6 of W. A. Hammond, M.D., Surgeon-General U.S.A., in which he orders that calomel and tartar emetic shall be stricken from the supply-table of the army. This Society can not accept the statement made in the order, that innumerable cases of ptyalism and mercurial gangrene have been observed in the army, as the result of the injudicious use of calomel. Many of the members of this Society have had extensive observation in regimental

and general hospitals, and have not observed innumerable cases of ptyalism, nor any case of mercurial gangrene. It is believed that from statistics, already collected since the publication of Circular No. 6, the statement may be made that calomel and tartar emetic have not been used to the injurious extent as set forth therein.

This Society can not resist the expression of its strong disapprobation of the Circular as unjust and untrue. In fact, it is a virtual endorsement of the false charges which have been made against the scientific profession by the representatives of the various empirical systems of medicine. The regular profession has always claimed the right to use any remedy that clinical experience has proved to have therapeutical power. To forbid the use of a remedy because it has been abused is to forbid the use of almost all remedies. The true course is to remove the surgeon who does not manifest skill or judgment in the administration of remedies.

This Society feels that Dr. Hammond has done great injustice to the profession in this State, and particularly to those who are now serving in the army. With few exceptions, all surgeons and assistant-surgeons from the State of Ohio have been submitted to a rigid examination as to their mental, moral and physical qualifications. This Society was instrumental at the beginning of the war in having the State Medical Board of Examiners of surgeons and assistant-surgeons appointed, and the members of this Society have insisted that no one should be appointed without an examination.

The Society believes that the surgeons and assistant-surgeons from this State are well qualified, and that Circular No. 6 not only implies that they are not qualified to administer safely two remedies, but raises a doubt in the public mind as to their general skill or ability, and for this reason is not only untrue and unjust, but cruel.

This Society, therefore, respectfully and firmly protests against the statement of Circular No. 6, as being untrue, and still further, as being at variance with the philosophy and progressive spirit of the legitimate profession. Therefore,

*Resolved*, 1st. That Dr. W. A. Hammond be requested to revoke Circular No. 6, and place calomel and tartar emetic again on the supply-table.

*Resolved*, 2d. That this Society will not be satisfied with anything less than a revocation of the order.

*Resolved*, 3d, That in the event of the refusal of the Surgeon-General to comply with this request, that he is hereby requested to resign.

*Resolved*, 4th. That a copy of this preamble and resolutions be sent to the Governor of Ohio, Senators Sherman and Wade, the President, Secretary of War, and the Surgeon-General of the United States.

Amended additionally by Dr. Hamilton :

*Resolved*, 5th. That Drs. Jno. A. Murphy, G. C. E. Weber and A. Metz be a committee instructed to report to the American Medical Association that this Society demands the speedy trial and expulsion of Dr. W. A. Hammond, for the gross injustice done the profession of medicine by his foolish and quackish order, No. 6.

The subject was discussed at length, with earnestness and dignity, by Drs. Hamilton, R. Thompson, Gans, West, McBride, Kincaid and others.

Dr. McBride offered the following preamble and resolutions as a substitute for the report of the committee :

Whereas we have reason to believe that, in consequence of the asthenic and scorbutic types of disease in our army, and that from the necessity of the case many inexperienced physicians, and a large number of the various tribes of quacks, such as Eclectics, Homœopathists, etc., etc., have got into the army as surgeons, and that with the types of disease prevalent, the injudicious use of mercury and antimony by these classes of men would be likely to cause more damage than the aggregate amount of good accomplished by these remedies in the hands of the judicious; and whereas the Surgeon-General, seeing this to be the case, has ordered the non-use of calomel, the mercurial most liable to abuse, designing thereby no reproof to the scientific surgeon, but a restraint upon all sorts of pretenders, for the good and efficiency of the army: Therefore,

*Resolved*, That we highly approve of the designs and patriotic motives of the Surgeon-General in issuing General Order No. 6.

*Resolved*, That the issuing of said order, and a general acquiescence in the same, will have the effect not only to save the

health and lives of some soldiers in the army on whom it was alone designed to operate, but to elevate the character of the medical profession, both in and out of the army.

In the midst of the discussion, the Society took a recess, for dinner, until 3 o'clock P. M.

#### AFTERNOON SESSION.

The Society resumed the debate on the resolutions under consideration before recess. Drs. Noble, Houghton, of Indiana, Kirtland, McBride, Hamilton and others, continued the discussion.

Dr. McBride withdrew his substitute, and read a written statement of his views, disapproving the tenor of the Circular, but doubting the propriety of extreme language in our resolutions of disapproval.

The resolutions and preamble of the committee were taken up separately, and unanimously adopted.

Dr. E. B. Stevens read his paper on New Remedies. On motion, referred to Committee on Publication, with instructions to print, and requested to continue on the same committee, to report at some future meeting, with the thanks of the Society.

Dr. Russell offered the following :

*Resolved*, That in the opinion of the State Medical Society, it is time our Legislature should adopt measures to erect an Asylum for Inebriates in our State.

*Resolved*, That an opportunity now be afforded for members of this Society to submit donations to this worthy object, which shall be binding if this State shall make an appropriation of \$20,000 or more for such noble charity, before the expiration of the next two years.

*Resolved*, That the President of this Society is requested and authorized to appoint one regular physician in each county of the State, who shall be solicited to procure subscriptions from our medical brethren in each county, and exert all laudable efforts in his power to enlist the energies of our Senators and members of the next Legislature, as may be practicable, for the passage of such laws as shall effect this object at an early day.

The Committee on Ethics made the following report :

Your committee beg leave to report that, in view of the evidence before them, they believe it to be their duty to sustain the action of the Montgomery County Medical Society, and ask to submit the following resolution :

*Resolved*, That Dr. Crook be expelled from this Society.

J. S. REISINGER,

H. S. CONKLIN,

F. M. ANDREWS.

On motion, the report accepted and adopted.

Dr. Hyatt moved that five hundred copies of the Constitution and By-Laws and Code of Ethics be published for the use of the State Society, and that the Treasurer be instructed to send a copy to each member of the Society as soon as published.

A charge of non-professional conduct was preferred against Dr. Gruwell, of Damascoville, and, on motion, it was referred to the Committee on Ethics.

On motion of Dr. Scarff, when this Society adjourn, it adjourn to meet at Cincinnati, on the third Tuesday of June, 1864. Amended to read White Sulphur Springs, instead of Cincinnati.

Dr. M. Dawson offered the following :

*Resolved*, That the thanks of this Society be tendered to Andrew Wilson, Esq., of the White Sulphur Springs, for the use of the Hall and other accommodations afforded the meetings of the Society, as well as the courtesy and attention we have received as his guests.

On motion, the Society took a recess until to-morrow morning at 9 o'clock.

### THIRD DAY.

9 O'CLOCK A.M.

Minutes read and approved.

Dr. Leonard offered the following, which, after some remarks and minor amendments, were adopted :

Whereas, it is known that the Secretary of War has appointed one Doctor Gilson, a Homœopathic pretender, as Examining Surgeon in the Board of Enrollment, in the Fourth Congressional District, in preference to honorable and high-minded men of the regular profession : Therefore,

*Resolved*, That that appointment, as well as all others of like character, is an outrage on the people of the District, unjust to the profession of medicine and the advancement of science, and prejudicial to the public service.

*Resolved*, 2d, That the Secretary be directed to send a copy of this preamble and resolution to the Secretary of War, asking his removal, through Gov. Tod and Col. Parrott, Provost Marshal of this State.

Dr. Murphy offered the following :

*Resolved*, That the members of this Society, and the profession of the State at large, be requested to exact from all students the qualifications as to preliminary education laid down by the American Medical Association.

*Resolved*, That the President appoint a committee of three members, to be present, with the permission of the several faculties, at the final examination of the candidates for the degree in each of the four medical schools of the State.

*Resolved*, That the schools of the State be requested to raise their fees, so as to amount in gross to one hundred and five dollars.

—And proceeded to address the Society at considerable length on the whole subject of medical schools, medical students, medical education, etc., etc. Drs. Scarff, Russell, Kirtland, Spees, Hamilton and others participated in the debate. The resolutions were adopted.

Dr. N. Dalton proceeded to read a volunteer paper on “ Arrest and Cure of a case of Mollites Ossium by the use of Phosphate of Lime and Phosphoric Acid, with remarks.” On motion, referred to the Publication Committee with instructions to print, and the thanks of the Society to the author.

Dr. Hyatt proceeded to give a volunteer contribution “On the use of Hydrocyanate of Iron in Epilepsy, with cases.” On motion, referred to the Committee on Publication with instructions to print.

Remarks were made by Dr. Stevens, giving some personal experience adverse to the beneficial effects of the remedy; and by Dr. Kincaid, especially giving his experience in the good effects of cannabis indica and belladonna.

Recess.

## AFTERNOON SESSION.

The question of the existence of a diploma plate or parchments for this Society was raised by Dr. Stevens, and after some remarks by several of the old members, on motion, Drs. Gans, Stevens and Murphy were appointed a committee to make all necessary inquiries on this matter, prepare a design of a plate, if necessary, and report the expense, at the next meeting.

Dr. McBride read a volunteer paper on certain adipose tumors. Referred to the Committee on Publication with instructions to print.

At different times during the session of the Society the Committee on Admissions reported the names of the following as suitable persons to become members of the Ohio State Medical Society, who were thereupon duly elected: Drs. T. L. Neal, Dayton; Robert Woody, Eaton; A. Beach, Belleville; C. D. Case, Lewis Centre; C. Gunzaulus, Mt. Liberty; Joel Morse, Cleveland; R. E. Jones, Gomer; A. Potter, Wiltshire; Alleyne Maynard, Cleveland; J. J. Hamill, Newark; S. J. Spees, Lynchburg; J. C. Brown, Urbana; Milton Mitchell, Mansfield; L. J. Pease, Williamsburg; J. H. Buckner, Cincinnati; J. T. Reid, Fairfield; and John Turnbull, Xenia.

The Finance Committee made the following report:

The Committee on Finance respectfully make the following report: Having examined the accounts, papers and vouchers of the Treasurer, Dr. J. B. Thompson, we find the same correct, the exhibit presenting the following statement:

Balance in Treasury from last year.....	\$ 11
Postage stamps and stamped envelopes.....	3 93
Initiation fees and fees of assess't, and sales of Transactions.	263 02
Expenditures.....	233 95
Balance in Treasury.....	<hr/> \$33 11

Your Committee take great pleasure in expressing much gratification in the very satisfactory manner in which the Treasurer has performed the arduous duties of his office, and unanimously recommend the adoption of the report.

C. P. LANDON,  
J. P. KIRTLAND,  
W. D. SCARFF.

On motion, adopted.

The subject of obituary notices came up, and Dr. Landon stated that he had been unable to collect any materials of value; and, on motion, the members present were requested to give personal reminiscences of any deceased members of their acquaintance. Dr. Hamilton gave touching and appropriate notices of Drs. Pierce, Carley and Spillman. Dr. Smith noticed still further the deaths of Dr. Pierce and Dr. McMeens.

The President announced the following committees for the ensuing year:

#### STANDING COMMITTEES.

*Executive*—M. Dawson, E. Hyatt, J. G. Rogers, J. P. Kirtland, R. Thompson.

*Finance*—D. S. Gans, R. L. Sweeney, A. Carey, D. Noble, T. J. Mullen.

*Publication*—E. B. Stevens, N. Dalton, J. J. Hamill, J. W. Hamilton, W. W. Dawson.

*Medical Ethics*—J. S. Reisinger, F. M. Andrews, A. Metz, H. S. Conklin, W. C. Hall.

*Medical Societies*—P. Beeman, A. McBride, W. L. Peck, Wm. Mount, G. F. Mitchell.

#### SPECIAL COMMITTEES.

*Surgery*—N. Dalton.                    *New Remedies*—E. B. Stevens.

*Diseases of the Eye*—A. Metz.     *Insanity*—R. Gundry.

*Obstetrical Surg'y*—M. B. Wright.   *Asthma*—T. A. Reamy.

*Practice of Medicine*—J. A. Murphy.   *Pancreatic Disease*—J. P. Gruwell

*Obituaries*—M. Dawson.                *Diphtheria*—P. Beeman.

*Electricity in Obstetrics*—D. S. Gans.

*Delegates to Indiana State Medical Society*—H. S. Conklin, J. A. Murphy.

*Delegates to American Medical Association*.—W. C. Hall, Fayetteville; A. Mets, Massillon; J. G. Rogers, New Richmond; D. S. Gans, J. A. Murphy, E. B. Stevens, G. C. Blackman, J. L. Vattier, George Fries, B. F. Richardson, J. Graham, W. W. Dawson, M. B. Wright, Cincinnati; F. M. Andrews, J. C. Denise, T. L. Neal, C. McDermont. Dayton; J. W. Russell, Mt. Vernon; W. L. Peck, Circleville; Wm. Mount, Cumminsville; F. T. Hurxthall, Massillon; L. T. Pease, Williamsburg; G. F. Mitchell, Mansfield; J. S. Reisinger, Gallion; P. Beeman, H. S. Conklin, Sidney; Abel

Carey, Salem ; J. W. Hamilton, John B. Thompson, S. M. Smith, John Dawson, Columbus ; C. P. Landon, Westerville ; N. Dalton, Logan ; G. W. Boerstler, Lancaster ; M. Dawson, Royalton ; R. L. Sweeney, Marion ; E. Hyatt, Delaware ; A. McBride, Berea ; T. J. Mullen, New Richmond ; B. B. Leonard, West Liberty ; C. C. Hildreth, Zanesville ; E. Vanatta, New Lexington ; D. Noble, Sugar Tree Ridge ; T. W. Gordon, Georgetown ; G. C. E. Weber, E. Sterling, J. A. Sayles, C. A. Terry, A. Maynard, Cleveland ; W. B. Scarff, Bellefontaine ; C. Falconer, Hamilton ; C. Cochran, Sandusky ; S. J. Spees, Lynchburg.

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## American and Foreign Intelligence.

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*Letters from Prof. Charles A. Lee.*

THE VENETIAN PROVINCES, POPULATION, BRIDGE, FORT PADUA, UNIVERSITY, BOTANIC GARDEN, MUSEUMS, OBSERVATORY, HOSPITALS, ETC.

PADUA, Oct. 20, 1862.

Having determined to visit the Venetian Provinces, including the celebrated *Quadrilateral*, taking the cities of Padua, Vicenza, Verona, Mantua, etc., on my route, I left Venice in the early morning train, and reached Padua in about one hour: distance twenty-seven miles.

Under the name of the Lombardo-Venetian Provinces are included all the Austrian possessions in Italy since the Treaties of Villafranca and Zurich. They embrace all the territory of the Republic of Venice, ceded to Austria by Napoleon I. by the Treaty of Campo Formio, and confirmed by the Treaty of Vienna; the possessions of the Dukes of Mantua east of the Mincio; the triangular space between the Lower Mincio and the Po, once a part of Lombardy; and some small possessions on the south of the Po, belonging to the Territory of Gonzaga, retained after the annexation of the Duchies of Parma and Modena, and of the Legation of Ferrara, to the North Italian Kingdom in 1860. The whole Austro-Italian Province include about 2,400,000 inhabitants.

Leaving my hotel, the *Albergo dell' Europa*, formerly the Gius-tiniana Palace, fronting the harbor, of which it commands a fine view, and near the Piazza de S. Marco, a gondola conveyed me rapidly to the railway station, which is at a considerable distance

from most of the hotels. Here, having submitted to a stricter examination of luggage by the police than is usual outside of the Austrian dominions, we soon entered upon the long bridge which carries the railroad over the lagune, which took us six minutes in crossing. It consists of 222 circular arches of 32 feet 9½ inches span; the thickness of the single piers is 3½ feet; the whole length 2 miles and 416 yards. It occupied four and a half years in erecting, and was completed in October, 1845. The height of the top of the parapet above the mean level of the water of the lagune, is 14 feet; its width 29½ feet. In the center is a large embankment called *Piazza Maggiore*, 446 feet in length, and 97 feet 10 inches in width. The depth of the water through which the bridge is carried, is from three to thirteen feet. The soil is entirely of mud. The foundation is upon piles driven into the bed of the lagune. The piers are of limestone, the arches and spandrels of birch, the cornice and parapet of Istrian stone. Close inside the parapet, on a level with the roadway, two channels are formed for carrying fresh water from the main land to Venice. In the foundations of this bridge, among other materials, 80,000 larch piles were used, and in the bridge itself 21,000,000 bricks, and 176,487 cubic feet of Istrian stone; and on an average one thousand men were employed daily. The cost was about one million of dollars.

About two miles from the lagune we reach the *Mestre Station*, where the railroad to Trieste branches off. But just before we come to it, we pass on the right the *Fort of Mulghera* (now *Fort Hainau*), a very strong position, which underwent a long siege in 1849, when its fall led to the surrender of Venice, although a large Sardinian fleet was in its waters, and although the distance is more than 3,600 yards to the nearest part of the city, and only to be approached by boats or along the railroad bridge. The surrender of the city was effected by a novel expedient practised by the Austrians. They dismounted the 24-pounder siege guns, placed the muzzle of the gun against the parapet, and the breech sunk in the ground, giving the bore of the gun an elevation of about 45°, and thus without carriage or platform of any kind, obtained ranges of 5,774 yards with solid shot, and with the howitzer and hot shot of 4,634 yards, thus easily shelling the city. In military language, this fort is a double enceinte on a bastioned trace, of earthen ramparts and parapets, with wet ditches, and detached demilunes in advance of the curtains of the outer enceinte. In the gorge of the work are two extensive caserns, built by General Chasseloup of the French engineers. The position is exceedingly strong, surrounded as it is by low, wet, marshy ground, liable to overflow by gust tides, and exceedingly unfavorable for approaches, and still more for the camps of a besieging army. There are but three stations between Venice and Padua, and the whole country is flat and uninteresting. At one point on the way, the Alps of the Friuli and Carinthia are well seen, and several villas of the

Venetian nobility are situated near the town of Dolo, on the banks of the Brenta.

Arriving at the Padua station, we encountered the usual crowd of carriages, calèches, omnibuses, runners, and baggage smashers, but working my way through the noisy crowd, I soon found myself quietly domiciled in "*La Stella d' Oro*," in the Piazz de Noli, in the center of the town and close to the University.

Padua is said to be the oldest city in the north of Italy, and Virgil attributes its foundation to Antenor. It contains about 50,000 inhabitants. The houses are supported by long rows of arches. It is particularly celebrated for its University, and the Observatory connected with it. Montaigne, the essayist, took this city on his tour in Italy, in 1580, and describes it as "a considerable town, as large as Bordeaux, with narrow and ugly streets, with very few people about, and hardly any houses worth looking at, but prettily situated in a plain, over which it commands an extensive prospect," which description holds good to this hour. He describes the inns as not comparable to those of Germany for accommodation, which is also generally true; but that "the charges are one-third less," is very far from correct at present, according to my experience. The charges, however, at hotels, both in Italy and everywhere else on the Continent, are high or low, according to the number of English who frequent them, and whether they are recommended in Murray's guide-book or not. An English physician of eminence, in London, advised me, if I wished to avoid high and extortionate charges, to carefully avoid all hotels of this class, and, though seldom followed, I found his advice very well worth heeding. As far as possible, however, I sought to avoid "Hotels d' Angleterre" and "Englischer Hafs."

The first place towards which I turned my steps in Padua was the University, or, as it was formerly called, "The Studio" of Padua. This enjoyed a high reputation as far back as 1221, when Frederick II. commanded the students of Bologna to forsake that city, which had incurred his displeasure, and to resort to the city of Antenor. At first, it was more celebrated as a school of law, and among other great teachers boasted of the eminent Baldus, but afterwards took very high rank as a school of medicine. During the sixteenth and seventeenth centuries, its professors were among the most distinguished in Europe. Among these may be mentioned Vesalius, Fallopius, Fabricius ab Aquapendente, Spigelius, Sanctorious, and, in later times, the great Morgagni. The Venetians took great pride in this University, and extended to it special protection and encouragement. Perhaps, at this time, its medical department enjoys a higher reputation than any other in Italy. There are five faculties, theology, law, medicine, philosophy and mathematics, and the chairs are all filled with very able men. Each faculty has a *Dean*, who is, generally, one of the senior professors. The *Senatus Academicus* consists of the Deans (*Directores*) and the *Rettore Magnifico*, who is elected by the several faculties, and approved by the government. There are forty-six

professorships, and the students generally number between 1,500 and 2,000. The public treasury contributes annually about two thousand dollars towards the general expenses.

There are several establishments in different parts of the town connected with the University, as four clinical schools for medicine, surgery, diseases of the eye, and midwifery; veterinary and agricultural schools, a botanic garden, and an astronomical observatory. The University building or Palace is called *il Bo*, or *the Ox*, as it is said from the sign of the inn upon the site of which it stands. The building was erected at the expense of the Republic of Venice in 1493. The great hall or court, planned by Palladio, with the armorial bearings of the members entirely covering the halls, is very magnificent. At the top of the great staircase is the beautiful statue of Elena Lucrezia Comaro Piscopia, who died, unmarried, 1684, aged forty-eight years. She spoke Hebrew, Arabic, Greek, Latin, Spanish, and French, with fluency, was a good poetess, an excellent musician, wrote mathematical and astronomical dissertations, and received a doctor's degree from the university.

The Anatomical Theatre was built by *Fabricius ab Aquapendente* in 1594, replacing one still older; still it is the oldest in Europe, the design being by the celebrated Paul Sarpi. The obstetric hall contains an immense collection of models, wax preparations, and wet and dry specimens, and also a very large number of monstrosities of every kind. The Museum of Anatomy is one of the best in Europe, and the same may be said of the Cabinet of Natural History. This was first founded by Dallisnieri in 1734. The mineralogical and palæontological divisions are the most complete; the latter particularly so in fossils of the Veronese and Vicentine hills, especially in fossil fishes from Monte Balca. Among other articles I saw here a petrified human skull and femur; mammoth-sized ammonites; an extensive series of birds' eggs, from those of the humming-bird to the ostrich; a stuffed elephant who killed his keeper in Venice; and among the rest the vertebræ of Galileo, who was professor of mathematics here for upwards of ten years. This relic is said to have been purloined when his remains were removed, in 1757, to their present resting-place in the Church of Santa Croce at Florence. His bust, placed over the chair he once occupied, exhibits a very broad and high head, the forehead very prominent and capacious, with thick moustache and long beard. Here is still preserved much, if not all the apparatus, with which Galileo illustrated his lectures. The Theatre of Physics contains one of the largest collections of philosophical apparatus in the world; the room is nearly one hundred feet by fifty, and entirely filled. The *numismatic cabinet*, opening out of the cortile, contains many Roman and Greek bronzes, inscriptions, and coins, and a curious papyrus from Ravenna of the year 616, a deed of sale. I should have stated that there are busts and portraits of all the former professors, including Vesalius, Fabricius, Galileo, etc., down to the present time.

From the University I went to the *Spicola* or Astronomical Observatory, founded in 1767. It is situated in the mediæval town of S. Tomaso, the principal defence of Padua on the west side. It was erected by the tyrant Eccolini, and served as a prison, where many of his victims suffered. It is under the charge of Professor Scaulini, who was absent on the Campagna, but I was shown everything by his able assistant. I found it supplied with the best of instruments from London, Munich, and Vienna. The equatorial is one of the finest in existence. The view from the top was magnificent, embracing the Campagna as far as the Adriatic, Venice, the Lagune, the entire range of the N. E. Alps, the Euganian Hills, etc., one of the most splendid panoramas. This establishment is, doubtless, one of the first in Europe, and does infinite honor to the city. Taking the Botanic Garden next on my way, I was very kindly taken in hand by the professor of this branch, who is also the conservator. He informed me that this was the oldest botanic garden in Europe, it having been established by the Venetian Senate in 1543. The celebrated Prosper Alpinus was professor of botany here in 1545. It is very extensive, and is situated near the churches of il Santo, and Sta. Guistina, and is laid out in the old formal Italian style. I was greatly interested in the garden, as it contained some of the oldest specimens of exotic trees and plants in Europe, the patriarchs of shrubberies, plantations, and conservatories. The magnolias are superb. The lebanon cedar, the oriental plane, and a *gleditchia* one hundred feet high, are among the most magnificent specimens on the grounds. Water is forced by a steam-engine over all the grounds, and supplies the fountains, etc., most abundantly from a river which runs through the city. Attached to the garden is a convenient and small fitted up lecture room and a botanic museum, with an extensive herbarium and a library of five thousand volumes with several manuscripts.

The *Biblioteca Publica*, which belongs to the University, is situated some distance from it in the *Piazza del Capitanio*, formerly the palace of the Carruras. The printed books number over 100,000 volumes, and the manuscripts 1,500. The immense hall containing the books is decorated with colossal frescoes of heroes and emperors, which were painted in 1540; among them is the portrait of Petrarch taken from life.

Having appropriated one day for visiting the hospitals of Padua, I set out very early in the morning for the *Spedale Civile*, in the street behind the University. Having sent in my card by the janitor, I was soon waited on by one of the attending surgeons, who very obligingly took me over the entire establishment. The building is very extensive, having been erected on the site of a suppressed college of the Jesuits in 1795. It is of two stories and basement, built around an open court, between 300 and 400 feet on a side. It can easily accommodate 500 patients. Five of its wards belong to the University and constitute the clinical school, embracing fifty medical and twenty-five surgical cases.

There were the usual divisions of male and female medical and surgical wards, also syphilitic, obstetric, and ophthalmic wards. There is also provision made in one division for cases of insanity; about one half the beds only were occupied. A few children, as is common in most Italian hospitals, were mixed in among the other patients, there being no children's hospitals. The wards were large, with very high ceilings and floors of polished breccia, which, on the first floor, was rough and much broken. At the end of each ward was a small altar, with an image of the Virgin and many pictures of saints, lighted candles, etc. It was the hour of the morning visit, and the attending physicians kindly invited me to accompany them in their rounds. I was struck with their very careful diagnosis and thorough investigation of every case. Their prescriptions, also, seemed very judicious. The physicians-in-chief are Doctors Bianchessi, Vandiani, Da Lu Ca, and Pellizzari. In passing through the wards it was almost impossible to distinguish the women from the men, and I was constantly confounding them. The females, from exposure to the sun and air, from constant occupation in agricultural labors, soon acquire masculine features and become prematurely old, gray, and wrinkled. The hospital was generally well ventilated and clean, except the insane wards, which were intolerably filthy, close, and unventilated. There seemed to be little or no classification. The nurses generally were females.

The hospital of *S. Giovanni di Dio* is under the management of the monks of that order, and receive but a limited number of acute medical and surgical cases. It seemed to be well managed. The Foundling Hospital is the oldest institution of the kind in Europe, having been founded in 1097. The annual admissions are about four hundred, and the deaths average fifteen per cent.

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#### VENICE—ITS CLIMATE, PHYSICAL HISTORY, MUD-BATHS, ENGLISH PHYSICIANS.

VENICE, Oct. 25, 1862.

In my previous letter I spoke of some of the peculiarities of the climate of Venice. Since then I have made other researches, which go to show that during a series of years snow has fallen on six days of the winter, and that although the hygrometer indicates a high degree of humidity, especially when the wind blows from the sea, yet that there are many maritime towns in southern Italy, frequented by invalids, which give a similar mean. This, indeed, is true of Rome and other towns at some distance from the sea, not surrounded by morasses. During a series of seven years the number of rainy days has not exceeded seventy-five, which is as low as in any part of southern Italy, while the annual quantity of rain is less than in many of the southern towns. The physicians here attribute many of the peculiarities of the Venetian climate to

the influence of the north-east wind; for, besides dispersing the miasma, as already stated, it is said to be mainly influential in causing the vicissitudes of the weather, and the particular character of the annual climate. As it sweeps down from the northern part of the gulf, carrying before it all atmospheric impurities, it speedily brings on a copious rain, especially when it succeeds a warm and damp wind; not of long continuance often, when the sky clears up, and the atmosphere becomes pure, transparent, and mild. In winter the same wind is apt to bring snow. Often a terrific thunder-storm breaks over the gulf when the same wind encounters the blasts blowing from the sea, while, at the same time, the sun shines with splendor over the city, gilding all her domes and marble palaces.

I have alluded to the changes going on in the character of the Venetians, and even the expression of their features, from the tyrannical and iron rule of the Austrians. The climate, we know, must necessarily favor a life of indolence and voluptuous ease, a state of inertia in which the moral and physical energies are equally dormant; yet no one can take a retrospective view of Venetian history without admiring the lofty courage, the undaunted bravery, the heroic deeds, the wonderful achievements of this small republic from its foundation, almost contemporary with that of Rome, down to the final extinction by Bonaparte in 1797. A tinge of melancholy, pride, and graceful dignity still shines prominently forth in the countenances of the descendants of the old nobility, but this is replaced by a malignant scowl of mingled scorn and hate at the sight of an Austrian soldier or the thought of Austrian rule. The marvelous silence which reigns over this city of 120,000 inhabitants is emblematic of her national extinction, and quite consonant with the death-like vitality of her people. Whether it is that these moral causes have modified and changed the physical character of the Venetians, I cannot say; but certain it is that they now exhibit the nervous temperament developed to the very highest degree. "To die of a rose in aromatic pain," might almost literally apply to the inhabitants of Venice. Nervous diseases are therefore most frequently met with. On this point the physicians here are all agreed; and they also admit that bloodletting has to be practised here with far more caution than in some other parts of Italy, as death not unfrequently supervenes on a fit of fainting consequent on loss of blood. So free is the city of intermittents, and so salubrious its climate considered, that it is not unusual for patients suffering from malarious fever to come here to recover from its attacks. The mildness and equability of the winter climate attract many patients here annually from the north of Europe, especially from England, who seem to relish greatly the quiet tranquillity and repose which prevail over the city; and it is said that some forms of paralysis, as well as neuralgic pains, are frequently benefited by a few months' residence. As adjuvants in the treatment of these affections, there are saline

and mineral mud-baths, besides baths composed of sand and warm salt water, all of which are held in high esteem by the local physicians as producing stimulating and resolvent effects.

These mud-baths, by the way, are extremely popular in Italy. For instance, Abano, on the route from Mantua to Padua, is celebrated for its *muds*, as well as its warm mineral springs. These are applied either generally or partially, as the case of the patient may demand. These are thrown by after having been used, and, at the conclusion of the season, returned to the hot fountain, where they are left till the ensuing spring, that they may become impregnated anew with the mineral virtues which these are supposed to contain. The most obvious of these are salt and sulphur. The muds are, on being taken out, intensely hot, and must be kneaded and stirred some time before they can be borne. When applied—an operation which very much resembles taking a cast—they retain their heat without much sensible diminution for an hour or longer, having the effect of a slight *rubefacient* on the affected part, and producing a profuse perspiration over the whole body. Heat is considered as essentially aiding the operation of this treatment; hence it is generally abandoned about the end of August. The water-baths, as in Venice, are only regarded as auxiliary to the mud treatment, serving both as prologue and interlude, and, in my judgment, not unfrequently as a farce.

There are generally two or three English physicians resident practitioners in Venice, as there are, also, in most of the other large towns in Italy frequented by English tourists and invalids. These are very apt to recommend their respective localities as especially suited for English patients. Those in Venice tell us, with considerable plausibility, that Englishmen, who have acquired a torpid and lymphatic temperament by living under the leaden skies and humid atmosphere which tend to depress the nervous system, experience a favorable change under the bright skies and purer air of Venice. But, so far as my experience or knowledge goes, the character of the Venetian climate is decidedly sedative, and that without regard to the country from which the traveler or invalid may come. It was for this reason, probably, that the Roman gladiators were sent to this part of Italy to reduce their plethora, diminish the excess of blood, and put them in good fighting condition, as related by Strabo. So far as I can ascertain, patients laboring under pulmonary consumption, except in its earliest stages, are not benefited by this climate, but the tubercular softening is much accelerated. So, also, patients who are much depressed, or debilitated from any disease, especially those of a sanguineous or irritable habit, will find the climatic influences too relaxing and prostrating. It is a very common practice here to prescribe decoctions of the marine confervæ, on the principle, I suppose, that every region ought to produce the remedies needed to cure the diseases of that locality. It is very possible that they may have some beneficial effect in scrofulous affections. There can be little

doubt but that the Venetian climate is well suited to cases of bronchial inflammation, chronic catarrh, and spasmodic asthma. The portion of Venice which is preferred as residence for the consumptive invalids is also the liveliest and most beautiful quarter of the city, viz. the Piazza of St. Mark, the Piazetta, and the greater portion of the Grand Canal as far as the Rialto.

The weather, since I came here, has been splendid: the temperature about  $65^{\circ}$ , neither too hot nor too cold; the atmosphere clear from clouds and vapor, and a transparency and purity of air that I have never seen surpassed in any part of the world. But I meet with tourists who have spent one or more winters in Italy, who tell me that the Italian climate is a humbug; that although October is a delightful month, the least objectionable of any in the whole year, yet that the winter climate is actually worse than that of England; that they are always chilly, and can nowhere find shelter from the piercing cold, etc. Much of this complaint may perhaps be attributed to the British habit of grumbling at every thing out of their own country (even the roses here are too fragrant), but still more to the fact, that in more northern climes the houses are prepared for the severity of the weather, and thick carpets, good stoves or grates, well closed doors and windows, with bright sea-coal fires, enable the Englishman to defy the winter. Here it is said that the cold is more intense within the house than without, as not a single window or door is air-proof, and a bright fire only increases the number and chilliness of the various currents which rush through every chink and crevice. As testimony to this effect is pretty uniform, we may very safely conclude that a winter residence in any part of Italy is not without very serious drawbacks. On this point, however, I shall be better prepared to give an opinion after I have had some personal experience. I will, however, say, that in my judgment there is not a more pitiable sight in the world than that of patients far advanced in consumption wandering over Italy in search of health. They must have strange forebodings on visiting the cemeteries, which are crowded with the tombs of foreigners who came here for health, but who perished of phthisis. How can invalids who are always sensitive and irritable, generally unacquainted with the language, the people, and the habits of the country, expect to avoid a thousand vexations and trials, thus increasing the sufferings they had expected to mitigate, and hastening the progress of a malady they had confidently hoped the climate would retard or avert? Home, and its consolations, comforts and conveniences, are too little prized by the invalid, who, seduced by the enchantment of distance, and the interested statements of local practitioners, relinquish the last chance and the last hope of recovery, to wander and perish among strangers in a distant land. We shall see, hereafter, that although the extreme range of temperature is not as great in Italy as in our own country, yet the changes and variations are frequent and sudden, and felt quite as sensitively, and probably more so, than

with us. And then there are the fatigue, discomfort, and risk, attendant upon changing their place of residence as the seasons change, to say nothing of the mania of sight-seeing, which is constantly exposing them to risks and dangers of every kind.

I am satisfied much has yet to be learned regarding the effects of climates, and of change of climate, as influencing the progress of disease. It seems to me highly probable, if not absolutely certain, that nature has adapted the constitution of man to his hereditary climate, and that it is hardly consistent with nature's laws and operations that a person born in our country, when attacked with tubercular disease, can be cured by a foreign climate entirely different from his own. The mortality from consumption is vastly greater in warm than in cold countries. What is wanted is a *uniform*, not a *warm* climate. The latter always facilitates tubercular softening, and hastens the final termination. A change of climate necessitates acclimation, and thousands sink under the probationary process from fatigue and exhaustion. The greater sensitiveness to cold, from the increase of the nervous temperament, caused by greater heat, more than counterbalances the alleged good effects of warm climates. If a change is deemed advisable or necessary in consumption, let it be a change of air in the same climate where the patient and his ancestors were born, and not a violent transition to warm countries. There can be no doubt whatever that the climate of the United States, embracing the utmost variety from the great lakes and the St. Lawrence to the Gulf, and from the Atlantic to the Pacific, affords to the pulmonary invalid greater chances of recovery than can be found in Italy or any other section of the globe.—*Amer. Med. Times.*

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*Remarks on Amputations.* By DEWITT C. PETERS, Assistant Surgeon U. S. A.

Mr. Skey, in his instructive work on operative surgery, uses the following impressive language :

"Amputation is the last resource of the surgeon—at once the shelter and confession of the incompetency of surgical art. The knowledge and skill of the surgeon fail to cure a disease, and he is reduced to the necessity of removing the entire portion of the body of which it forms a part. If such a disease prove incurable in his hands, he is justified, in obedience to an imperative law of nature, which dictates the desire of prolonged life, in removing it, with a view to preserve the mutilated relic. There is no operation in the whole range of surgery compared to that of amputation, that should claim the previous exercise of an equal amount of skill, of patience, or the decision on which demands so large an amount of conscientiousness. The most experienced are yet but students."

The era of promiscuous surgery, both in military and civil life, has passed nearly, if not quite, into oblivion. It is with pleasure we read and witness the rise of our science in common with its kindred associations in the arts, until the present half century is reached, when we find it resting on a sound basis, and supported by established laws and precedents. The surgeon of to-day who would thoughtlessly or recklessly sacrifice a limb in preference to making the exertion to save it, does so at the peril of his professional reputation. He meets the condemnation of his fellows, and renders himself amenable to the laws of the land. The exigencies of the battle-field no longer shield ignorance or rashness, and it must only be viewed in the one light of being the chosen spot where we are to exercise our highest endowments, keen judgment, skill, and discrimination, in saving both life and limb. In the trying emergency when the army surgeon is surrounded in countless numbers by his wounded fellow beings, he wields a power for good or evil unknown to any other calling. Suspended on his efforts are the great issues of prolonging and saving life, and, lastly, that of preventing deformity, and hastening recovery. Surely, then, he should be master of his position, and feel confidence in his abilities to accomplish the most good with the least means.

The question of the preference or advantage of primary over secondary amputation in certain cases resulting from gunshot wounds, notwithstanding the statistical evidence of a list of surgeons, headed by Mr. Guthrie, is, and probably will be for a long time to come, open for discussion. The theory of John Hunter that "amputation is a violence superadded to the injury, and therefore heightens the danger," continues to have its followers, and seemingly it is not wanting in a degree of plausibility. In this instance, however, like unto several disputed points in our science, rarely the truth lies in an excessive faith for either side, but rather in choosing for our guidance a middle and safer course. There are circumstances encountered in a variety of cases met with on the field, which in their investigation cause a deviation from any rule established upon incomplete statistics, or else the surgeon sinks to the rank of a mere routine operator. It was the early practice of military surgeons to resort to primary amputations indiscriminately, and it was then the easiest and best mode of relieving the wounded. The treatment of wounds and fractures was not so well understood by these ancients as by ourselves, and, lacking army hospitals, the wounded were thrown upon the communities where they chanced to be, and it is to be supposed they received very little surgical care. In his unparalleled military experience, Larrey, no doubt, had his attention drawn to the fatal results following this general system of amputating, for on one occasion, after a great battle, he is reported to have dressed compound fractures of the leg with sheaves of grain, there being no other and better material to use as splints at his command. The fact is stated that towards the close of his career he was more cautious in resorting to the knife than he had previously been. The existing war in our own

country is doing much to elevate conservative surgery, and in no one particular point more than in deterring army surgeons from amputating without first seeking consultation. The conservative course instituted by these surgeons has been materially aided by the grand system of General Hospitals, which, like magic, have sprung up in our midst. Their number, capacity, and perfectness in detail, are at the same time the wonder and the pride of the nation. To the wounded soldier they are asylums where his flagging energies are revived, his hopes restored, and his wounds cured. They may be justly styled the spinal column to the army, and from sickness and injury they have stayed its decimation.

It is well authenticated in surgery that there is a material difference in the results following amputations performed on the battle-field, and the same operations performed in well organized civil and military hospitals. The operations may be executed with equal care and skill, yet on the field, under this severe surgical interference, the patient is prone to die. The reason is obvious, and is readily accounted for in examining the subject. A soldier after long and fatiguing marches, deprived of his rest, submitting quietly to irregularities in his diet, is suddenly ushered into a state involving great mental excitement; he over-exerts himself in the performance of his duty, and finally, struck down by a bullet, falls bleeding, and perchance badly wounded. The condition of such a person, when seen by his surgeon, is far from being desirable, nor can it be equal to the increased shock which amputation implies; therefore, succeeding the operation, reaction frequently cannot be established, and he must and does succumb. If, on the other hand, the reaction is slow, yet certain, the difference is only slightly in the patient's favor. He lacks the solid comforts and the coveted auxiliaries with which our General Hospitals abound, and he must be transported to receive them. The movements of a large army in a field of active operations require it to be relieved of its sick and wounded, and to a limited amount only can the supplies needed by them be conveyed. In consequence of these tangible reasons the indications in the treatment of recent amputations on the battle-field are violated in two very important points, viz: the parts are deprived of their natural rest and quietness. The sequel following the disturbing the patient at this period is, that he may live to reach a General Hospital with his vital powers nearly extinguished, or his strength so reduced that he is a fair subject to contract gangrene or any complication tending to lessen the chances of recovery. In the present undecided state of our experience, we are unable to determine whether many of our patients could more advantageously bear the transfer to a General Hospital in the first instance, and undergo the operation of amputation subsequently, or *vice versa*. These remarks are intended to apply directly to cases of gunshot wounds of the lower extremities, although their import reaches, to a certain degree, similar wounds of the upper extremities. The latter, however, are less dangerous to the patient, are followed by a weaker shock to the nervous system, and are considered by sur-

geons far more favorable for primary amputation than the former. In this connection it may be proper to call attention to the peculiarities noted in the constitution of some men to bear injuries, loss of blood, and severe surgical operations, better than the majority of their comrades. The same anomalous power is possessed by a few persons, when injured, to retain their strength under transportation from one point to another. In the spring of the year 1855, while serving in the Rocky Mountains against hostile bands of Utah and Apache Indians, I had charge of a soldier who had been badly wounded in the right knee-joint. By the force of uncontrollable circumstances I was not, at the time the injury was received, allowed to amputate. He was transported in a litter, supported and carried by two mules over a rough trail for the sixteen succeeding days. His equilibrium was not in the least disturbed by the journey, and on reaching our fort I placed the man under an anaesthetic, amputated his thigh, and had the satisfaction of witnessing his rapid recovery.

The mode of amputating, and the steps to be taken at each place of election, are matters clearly detailed by our text-books on surgery, and need not here be minutely recapitulated. The opinions of eminent surgeons, however, are at variance somewhat as to the exact shape of the flaps to be made in amputating, and also as to the manner of making them. The rule laid down, and practiced by many skillful operators, is to make double flaps when there is beneath a single bone (like the femur), and when there happen to be two parallel bones (like the tibia and fibula), to employ the circular operation. There is still a class of surgeons who give preference to flap operations in amputations wherever they can judiciously use them. The procedure of transfixing a limb and cutting outwards in forming flaps, has its warm advocates ; and, on the other hand (especially in certain localities), the steps of the operation are reversed by the surgeons making their incisions from without inwards.

The French surgeons have modified the old circular operation by dividing in respect to layers (that they may fully retract), the integument and the muscles, each separately. They claim thereby that fewer ligatures are needed, for the vessels are severed transversely and not obliquely, as happens in the flap operation. The choice of the operation itself, or the mode of performing it, is usually the effect of education and habit. Accordingly, each varies in individual hands, and has its own peculiar merits. The highest aim of the surgeon should be to save as much of the injured parts as he consistently can, and still give his patient a useful stump. In order to accomplish this important object, it may become necessary to combine the steps of two operations, and in these special cases the ingenuity of the operator may be fully taxed. If he pays due regard to the relative anatomy of the locality, and is governed by sound surgical laws, success will surely crown his efforts.

It is not my province, in these remarks, to advocate the recommendation of any one operation over another in a particular section,

nor do I believe such a course productive of benefit. The respective operations of Hey, Chopart, Syme, and Pirogoff, are to be put in practice when by the nature of the injury they are specially indicated. The most objectionable among these plans is the procedure demonstrated by Pirogoff, which in the hands of surgeons in this country has not proved propitious to its general adoption. In amputating the leg, a slight diversity of opinion still exists on the propriety of choosing between what was known in olden times as the "rich and poor man's stump."

In selecting the point at a hand's breadth below the knee-joint to operate, we secure sufficient material for a cushion to the stump, and to which a most useful and symmetrical artificial limb can be adjusted. The place of election being the lower third of the leg, where the soft parts are scanty, we gain a poor covering for the bones, and run the risk of having the cicatrix continually ulcerated by pressure. The theory of preserving as much of the limb as possible for the sake of beauty, has long since exploded, the mechanic having substituted an artificial leg, which, when covered by clothing, is fully equal in appearance to the natural limb. The long stump is again objectionable, on the ground that it lacks strength when compared to the "poor man's stump."

The operation of amputation at the knee-joint is not practiced by surgeons of the present day so commonly as in earlier times. The operation is selected when amputation of the leg is not admissible. The mode of operating in this locality is either to form a single flap from the posterior part of the leg, or else the circular procedure is employed. In either case the ends of the condyles of the femur are sliced off, the vessels are secured, and the flaps are brought into apposition. For practical purposes the stump thus formed cannot be excelled, but the danger to the patient is enhanced by exposing and disturbing the sensitive structures composing this great joint. The constitutional troubles generally arising from the operation under consideration are of the most serious character, and not unfrequently terminate speedily the patient's existence.

The majority of our most eminent surgeons prefer the flap operation in amputating the thigh, and to the observer it is certainly one of the most satisfactory operations in surgery. The character of the injury or the effects of disease may, however, be impassable barriers against the use of this single mode of operating in all instances. In these exceptionable cases we are to be governed entirely by the surrounding circumstances in making the flaps, and, above all, we are to take care and not include unsound tissues in the newly formed stump. The selecting of the place to amputate the thigh may be followed by mighty consequences, for it is well known that the nearer the hip-joint the limb is removed, the greater is the danger, and, in a minor degree, the same may be said in approaching the knee-joint. The practice of always amputating a contused and mangled limb (as recommended by a late writer), because it is "a constant source of accumulating irritation," is a bad precedent to establish, it being at variance with our ex-

perince and also with conservative surgery. The great dangers to be apprehended and guarded against in amputating the thigh are those arising from the shock and constitutional irritation ; locally, we may have secondary haemorrhage, pressure, and ulceration, caused by the remaining portion of the femur (when the flaps are scanty, and the stump is not properly supported, the free end of the bone is prone to tilt upwards). Exfoliation of the sawn extremity of the remaining fragment, and, lastly, extensive inflammation and sloughing, may be a source of annoyance, and arrest the recovery of the patient.

In discussing the important subject of compound fractures of the thigh, too little stress has hitherto been paid by surgical writers to the saving of limbs. Following the teachings of Dupuytren, Baudens, Hennen, Guthrie, and a host of others, we are too ready to admit that amputation is our sole reliance. They would have us believe that the patients who save their limbs remain ever afterwards martyrs to a miserable existence ; that for years fistulous openings, necrosed bone, shortening of the limb, gleety sores, and shattered health, torment the sufferer, and finally end his career. Others inform us amputation of the thigh is a dangerous expedient, and in their hands has resulted, in the majority of cases, fatally, yet they carefully avoid entering into any details of their manner of treating these fractures. The wonder to my mind is, that their patients ever recovered when laboring under this species of injury, for in both England and France, according to my observation, they are sadly deficient in the modern mechanical appliances necessary to treat these fractures successfully. The surgeons of America are peculiarly expert in the treatment of fractures of the thigh, which, after much study to fully comprehend, they have reduced to a science. They are not, therefore, to be deterred in their progress by worn-out theories, or the dread of encountering necrosed bone and its usual train of troublesome symptoms. If the case is pronounced favorable for preserving the limb, it is submitted to a judicious system of treatment in some General Hospital. The removal of the patient now becomes the object demanding our earnest attention, for at this early period of the injury, by negligence or carelessness, the condition of the sufferer can be rendered hazardous. The indications are, to place the parts in a natural position, keep them immovable, and dispense with snug bandages and splints. In addition to the common field litter, I would recommend that one or two double inclined planes be furnished to the surgeon of each regiment. The double inclined plane should be similar to the pattern constantly used in our large civil hospitals, where we commonly meet with these injuries. The apparatus is so constructed that it will rest securely on the litter, and can easily be changed to either side, and thus made to accommodate itself to the fractured limb. It can be firmly secured to the litter by straps and buckles, or can be fastened by strips of bandage. The advantage gained by the use of this apparatus is, that it prevents the disturbing of the patient unnecessarily, and, also, it gives us free access to the wounds

on applying fresh dressings, and when not in service it can easily be transported. The treatment of recent stumps is of far more importance than the mere steps of the operation, which can be readily learned and carried into execution. The former requires patience, experience, and skillful manipulation. It may be said with truth that on these details, more than the skill exemplified in operating, depends the patient's life. Before closing the flaps of the stump, be sure the haemorrhage has ceased. If it is general from the fresh cut surface, it is prudent to leave the parts exposed to the air for a time, or bathe them with cold ice-water. Should the bleeding be continuous and flow from the cancellated structure of the bone, it can be arrested by a plug of beeswax or wood without injury. The dressings to be used should be light and secure, yet care must be taken to loosen them on the advent of inflammation and swelling. The great danger being from secondary haemorrhage, we should avoid stretching the ligatures until a sufficient time has elapsed for them to become detached. In removing the adhesive straps they should first be loosened by bathing the parts with tepid water, and then with the forceps they should be seized and drawn towards the uniting wounds; an opposite course would tend to break down recent adhesions. Finally, in the treatment of the general and local symptoms as they arise in these cases, it remains for the surgeon to exercise his judgment to the best advantage of his patient.—*American Medical Times.*

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### *United States Army Medical and Surgical Society, of Baltimore.*

#### GUNSHOT AND PUNCTURED WOUNDS OF CAVITIES.

Dr. Dare commenced by remarking that wounds of the cavities were, as a class, the most dangerous which came under the care of the surgeon. The cranial, thoracic, abdominal, and pelvic cavities contained the viscera, including the vital organs; these viscera were liable to be injured by the missile or weapon penetrating the cavity in which they were contained; therefore the subject might be said to include *wounds of the viscera*. The principal cavities were all lined by a membrane extremely prone to take on extensive and dangerous traumatic inflammation.

#### WOUNDS OF THE CRANIAL CAVITY.

Dr. Dare remarked that the brain might be indirectly injured by a missile or weapon which did not penetrate the cavity of the skull. The cranial wall being driven in, the depressed and broken fragments, acting as a foreign body, compressed and irritated the brain. When symptoms denoting compression resulted, the indication was clear; but a question not so well settled was—Whether, where there was manifest depression with probable comminution

of the internal table, in absence of symptoms of depression, it was justifiable to use the trephine in anticipation of future mischief?

Guthrie's opinion was quoted—that in case of an adult, it was both justifiable and advisable. The Doctor spoke of a German Lieutenant who came to the National Hospital to have a musket-ball extracted from his head. It was found entirely imbedded in the parietal, having driven in the bone about half an inch. It was extracted with difficulty. It was then two weeks after the receipt of the injury: no brain symptoms had supervened, and, when heard from several weeks afterwards, he continued well.

As an illustration of a depressed fracture from a different cause, Dr. Dare reported the case of a man who came into the National Hospital, having been thrown from a buggy, his head coming in contact with the curbstone. The symptoms of concussion soon passed off. A fracture with depression, denoted by a well marked ridge, was discovered on the right side of the frontal bone near its junction with the parietal. There were no symptoms of depression, intellect perfect, and man cheerful. On the fifth day after admission he became somewhat comatose; he would answer questions, but irrationally and with difficulty. The symptoms becoming worse, he was, as a *dernier ressort*, trephined by Dr. D. The detached fragments were removed, and the depressed portion elevated. No marked change immediately followed the operation. The patient died within twenty-four hours.

Autopsy revealed the dura mater a little thickened under the point of fracture, but the cause of death was found to be suppuration at the base of the middle lobe of the brain, diagonally opposite on the left side at the seat of counterstroke.

A ball might pass through the cranial wall and remain in contact with the dura mater without penetrating the brain. The Doctor cited, as a remarkable illustration of this fact, the case previously read by him before the Society, of a "gunshot wound of the cranium, followed by an abscess of the brain, caused by the presence of the bullet, resulting in death two months after the receipt of the injury," and remarked that we would naturally expect, as happened in that case, ulceration to result in consequence of continued pressure.

When the brain was extensively injured by a weapon, or by a missile, either passing out or lodging, death usually resulted immediately or within a few days. Some remarkable cases were, however, recorded, in which patients survived after the most extensive injuries of the brain. The following case came under the care of Dr. Dare's former preceptor, Dr. Dunbar. A young man, out on a sporting expedition, raised his gun nearly perpendicularly and fired at a bird flying directly over his head. The gun burst, and the piece of iron by which the barrel was screwed to the stock entered about the middle of one side of the frontal bone, making a hole about two inches in diameter, and penetrating deeply into the brain, from which it was extracted by the Doctor. Some hernia

cerebri resulted, but the man recovered, preserving his mental faculties entirely. He still lived, and was well.

The Doctor cited an almost exactly similar case, related by Guthrie, of a boy, nineteen years of age, from whose brain the breech-pin of a gun, three inches in length and three ounces in weight, was extracted twenty-five days after the receipt of the injury. The patient recovered perfectly. Dr. Dare remarked that such almost miraculous cases were of course rare exceptions to the rule, and that their only practical use was to teach the surgeon never to despair absolutely of a case, however desperate.

The indications in all cases of wounds of the cranial cavity, directly or indirectly implicating the brain, were—to remove foreign bodies, broken and depressed fragments of bone, or the ball, if superficial and easily accessible, and to keep down inflammation. Hernia cerebri had, perhaps, best be left to nature.

#### WOUNDS OF THE THORACIC CAVITY.

Wounds of this cavity derived their importance from the fact of its containing two vital organs, the lungs and the heart. What were the symptoms of a wound of the lung? Hæmoptysis was one of the most common, and was considered almost pathognomonic, but it was not universal. Some few cases had been treated at the National Hospital, in which air was respired for weeks through the external opening, but no blood came from the mouth. On the other hand, a man might spit up blood after being struck upon the chest by a spent ball coming in contact with the belt, or some solid body in the pocket, which prevented it from penetrating the thorax. If the opening was large and direct, air would probably be respiration through the external opening. Emphysema was a reliable symptom of wound of the lung, but it did not usually result unless the opening was oblique or devious in its direction.

The degree of dyspnœa depended upon the size and directness of the external orifice, and upon the quantity of blood poured out into the pleuritic cavity or substance of the lungs.

The direction and course of the ball should be observed: if there were two orifices, the ball had probably passed straight through; if it had run around superficially, its course would probably be marked by a discolored line and tenderness along its track. The presence or absence of symptoms of collapse would assist the diagnosis.

The indications for treatment were—to arrest hæmorrhage; to prevent as far as possible the admission of air from without, and thus to avoid collapse of the lung; to moderate inflammation, and to support the patient during the stage of suppuration. The treatment was essentially different in simple punctured or incised wounds, from that in gunshot wounds of the lungs. In simple wounds, if there was not much hæmorrhage, the sooner and more exactly the external orifice was closed the better, in order to obviate, as far as possible, the danger of collapse of the lung, and to favor union by the first intention.

Guthrie advised that the patient should lie upon the injured side, in order to keep the surfaces of the wounded pleuræ together, that union might take place, and thus obviate the danger of emphysema and pneumothorax. If dangerous haemorrhage existed, should it come from the intercostal artery, it should be ligated if possible; if from the substance of the lung and persisted, it might be necessary temporarily to close the wound, in order that the haemorrhage might be arrested by coagulation.

In gunshot wounds of the chest, a compress might be applied to the external orifice until suppuration took place, then the wound should be covered very lightly, or left open. If a rib was fractured by the ball, the fragments should be removed, expanding the wound if necessary. The finger being used as a probe, all foreign bodies, pieces of cloth, or the ball, if superficial and could be felt, removed.

If acute traumatic pneumonia supervene, the treatment must be regulated by the constitution of the patient. A more enlightened pathology had discarded the enormous bleedings recommended and practiced by Guthrie. It was generally found necessary to sustain the patient by nutritive diet, tonics, and stimulants.

If accumulation of pus or blood took place in the pleuritic cavity, compressing the lung and giving rise to dangerous dyspnœa, it should be let out. If the original wound is healed, it should be re-opened; if small, expanded; or, if not dependent, it might be necessary to make a counter-opening and keep it open.

The prognosis of a wound of the thoracic cavity, penetrating a vital organ, the lung, was always grave, but it was much less so in a simple punctured or incised wound where the external orifice might be immediately closed and there was a probability of union by the first intention, than in gunshot wounds where more or less sloughing in the track of the ball must inevitably result.—*Amer. Medical Times.*

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### *Calomel and Tartar Emetic in the Army.*

The recent order of the Surgeon-General striking calomel and tartar emetic from the Supply List, has naturally excited a large amount of discussion and criticism in popular and professional circles. Quacks of every shade and complexion, from the infinitesimalist to the humblest dealer in roots and herbs, are exceedingly jubilant and profusely congratulatory. The old-school practitioner, who has to grapple daily with disease in all its multiplied forms, and solve the abstruse questions in therapeutics by actual experimentation, and who has come to give his faith to calomel and tartar emetic as his unfailing weapons in affections of great severity, fancies that a deadly blow has been aimed at his long tried and faithful allies. But students in the school of mod-

ern pathology and physiology look on with indifference, feeling that they have little or nothing at stake in the issue.

Thus far in the discussion of this order two questions have been raised:—1st, The propriety of the order, and, 2d, The propriety of removing from the Supply Table the articles referred to. The consideration of these two propositions evidently covers the whole ground. Let us examine them in detail.

It will not be denied that it is the duty of the Surgeon-General to regulate the Medical Supply Table. Annually, or oftener if necessary, the list of remedial agents to be employed by the Medical Staff must be revised, and such remedies added or stricken from it as the service may seem to demand. And the aggregate quantity to be used within a given time for a given force is also prescribed. No one questions the necessity or propriety of this revision of the Supply Table. It has never yet been alleged that in the discharge of this duty the Surgeon-General was impertinently interfering with the practice of the Medical Staff. Nor until now did it ever occur to any one that by this act the Surgeon-General reflected upon the professional qualifications of the surgeons of the army. On the contrary, the army surgeon has always been gratified at the revision of the table, for it seldom happened that new and important remedies were not added, and old and obsolete compounds stricken off.

The reason given in the order for striking calomel from the Supply Table is its abuse by military surgeons. The Surgeon-General states that he is officially informed that not only has profuse salivation been produced in innumerable cases, but that mercurial gangrene is of not infrequent occurrence. Finding it impossible to properly restrict the use of this powerful agent, he has ordered it stricken from the list of remedies furnished by the Department. He adds that he issues such an order with the more confidence, "as modern pathology has proved the impropriety of the use of mercury in very many of those diseases in which it was formerly unfailingly administered." That the Surgeon-General has presented sufficient reasons for his order no one not stubbornly wedded to antiquated ideas can deny. The correctness of his information in regard to the lamentable consequences following the abuse of calomel no one will doubt who has visited many military hospitals, and inquired particularly as to the practice. A certain class of physicians almost invariably employ calomel, and always administer it in cases of doubtful diagnosis; and they are not satisfied unless they produce its constitutional effects, believing that it is only under such circumstances that it is effectual. We have known of its exhibition in military hospitals to salivation in chronic diarrhoea, Bright's disease, chronic rheumatism, etc. But it may be said that in certain diseases it is acknowledged by all authorities to be useful, and is the army surgeon to be deprived of mercurials because certain persons abuse calomel? We answer, certainly not. There are still on the Supply Table several of the more eligible and useful preparations of mercury. There is the

blue mass, mercury and chalk, bichloride, iodide, etc., all much more elegant than calomel, and far more likely to give the beneficial effects of mercury without the unfavorable results.

That modern pathology has very much limited the class of diseases to which mercurials have been considered especially applicable, is apparent on every page of our recent works on practical medicine and surgery. Within twenty years, from being one of the most frequently employed agents of the *materia medica*, it has come to take a very subordinate position. And it should be a cause of sincere congratulation with every practitioner that, with the advance of modern pathology, a remedy of so much power for evil, if injudiciously used, is gradually being supplanted, whether by a more correct knowledge of its therapeutical uses, or by more eligible and more intrinsically harmless agents. The same remark is true of tartar emetic. This article the Surgeon-General has also stricken from the Supply Table, "for the reason that diseases prevalent in the army may be treated as efficiently without tartar emetic as therewith."

After a careful review of this subject, with an extended observation among the military hospitals, and of inquiry among army surgeons, we are compelled to regard the order of the Surgeon-General as a judicious, and even a necessary measure. In the opinion of the best medical officers, in no other way could the evil have been successfully reached. Fully confirmed in this view, we must regard the harsh criticisms of the Surgeon-General by certain medical conservatives as exceedingly unwise and unjust. We believe that in this order, as in all his official acts, he has not only endeavored to advance the best interests of the army medical service, but equally to maintain the honor and dignity of the profession of which he is a distinguished member.—*Amer. Med. Times.*

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*Chancres.* By W. E. BOWMAN, M. D.

*Treatment of Soft Chancre.*—Assuming that the reader is cognizant of the facts so briefly stated in the last two numbers of the *Lancet*, I need not dwell on the importance of a proper diagnosis of the different forms of chancre, before commenting on the treatment of them, which differs so widely.

Although mercury, taken internally, ends the cicatrization of hard chancre, it has no beneficial influence upon the chancroid, which remains stationary, or even progresses after salivation.

The virus resting in the sore itself and its underlying tissues, is only effectually destroyed by thorough cauterization.

*Pernitrate of Mercury.*—Having been invariably successful with this form of caustic for the arrest of soft chancres, in my own practice, I place it "par excellence," first on the list. I prepare it by adding an ounce of red precipitate to an ounce and a quarter of

nitric acid, in which it readily dissolves by shaking. It is very painful when thoroughly applied, causing much inflammation, and when the chancre is large, the effusion of serum into the cellular tissue of the prepuce. It has seldom to be employed but once, however, even in aggravated cases; nor have I ever noticed any injurious effect, hitherto, from its employment. Linseed poultices should be kept to the part until the inflammation subsides, and afterwards water dressing; when the gray slough separates, which it does generally in three or four days, the healthy ulcer left afterwards must be treated in the usual way with wet lint and oiled silk; stimulating it with red wash or solution of the chlorate of potash, should the granulations become exuberant. Collections of serum formed after the operation may be allowed to ooze away through punctures made into them with a needle.

*Canquoin's Paste.*—Rollet and Diday assert that this caustic, composed of equal parts of chloride of zinc and flour, whilst exceedingly efficacious, gives but very little pain. It is made by drying the powdered chloride over a spirit lamp before mixing it with dried flour, and adding alcohol, drop by drop, until the paste is formed, which is to be spread thinly on cloth and again subjected to a gentle heat, a disc of this paste corresponding in shape to the chancre and slightly exceeding it in size, is cut out and retained upon the surface, previously cleansed of matter, from one to three hours, and in large phagedenic ulcers from four to six hours, the patient keeping his bed until the paste is removed.

*Other Caustics.*—Nitric, strong acetic, and sulphuric acids, caustic soda, potassa cum calce, and even the actual cautery or knife, have their respective advocates. Dr. Bumstead, to whose work much of our former article was indebted, recommends the nitric acid in preference to all other applications, although he confesses that it sometimes requires to be repeated every second or third day.

*When wrong to Cauterize.*—Thorough cauterization is inadmissible when a chancroid extends deeply, and is situated directly over the urethra in either male or female, or in the vagina, when lying in contact with the bladder, rectum or peritoneum, on account of the danger of an opening being created into these parts on the separation of the slough. Again, cauterization is not applicable when the chancroid cannot be fully exposed as in phymosis, or when situated within the urethra, os uteri, etc., and would be useless unless every ulcer could be reached that would be likely to inoculate anew the eschar.

*Nitrate of Silver.*—This is altogether too feeble in its action for universal adoption in cases of chancroid, but proves extremely useful in those enumerated that do not allow of a more powerful application. A comparative trial of the merits of the nitrate of silver and the solution of the pernitrate of mercury, would satisfy the most skeptical of the superiority of the latter, even for the sore which has long remained stationary, or even continued to extend, notwithstanding the constant use of the one, will be found to yield

rapidly and cicatrize after a single thorough employment of the other.

*Stimulating Lotions.*—These have the same influence upon a chancre as upon simple ulcers, and although they do not affect its specific character, do much good by keeping the pus removed as fast as it is secreted, and by coagulating the virus and hardening the adjacent tissues, prevent the inoculation of the surrounding parts and check the growth of the sore.

Among the many astringent and disinfecting lotions now in vogue, the following may be mentioned as some of those most frequently employed, viz :

R. Zinci chlor gr. j. aquæ ʒ j. m.

R. Liq sodæ chlorinatæ ʒ j. aquæ ʒ ij. m.

R. Ac. nitrici dil ʒ j. aquæ ʒ viij. m.

R. Tannin ʒ ij. tinct opii. ʒ ss. aqua ʒ viij. m.

But the strength of these solutions must be adapted to the sensibility of the part which varies in different cases, they should never be so strong as to excite pain or produce irritation, and indeed in many cases, when constant attention can be paid to them, the lotion might as well consist entirely of water or glycerine.

The dressings should be kept covered with oiled silk and renewed in ordinary cases as often as two or three times a day, that the discharges should not long remain in contact with the sore.

The black wash so much employed all over the world is composed of two scruples of calomel and four ounces of lime water; it is less cleanly and desirable than any of the forms above mentioned.

Acetate of lead is objectionable on account of its forming an insoluble albuminate of lead on the surface of the sore which is with difficulty removed, and hides its progress.

Chancres beneath the prepuce, when it can be drawn back and examined, are often dressed with dry lint, which soon becomes sufficiently moistened by the natural secretion of the part.

*Chancres of the Frænum.*—The frænum is particularly liable to be destroyed by chancre. When perforation takes place, the bridle should be cut and the raw surfaces cauterized. Diday recommends the separation to be made with a pair of hot scissors which should be dull, these cut and cauterize at the same moment.

*Urethral Chancres.*—The surfaces of urethral chancres when near the meatus should be kept separate by means of wet lint, which should be pushed down upon the sore with a probe, and have a thread attached to it to facilitate its withdrawal. When out of sight, the case must be treated as in gonorrhœa, by first subduing the inflammatory symptoms, by diet, rest, diluents, cathartic medicines, &c., and the employment of emollient urethral injections, afterwards resorting to those which are more powerful.

*Phymosis.*—If the chancroid be concealed by a tight and inflamed prepuce, free use should be made of the syringe with tepid

bathing of the part which will not only keep the secretion from collecting, but also contribute materially to the reduction of the inflammation. When possible a little dry lint may be passed up to the sore and allowed to remain for a few hours before renewal. When the head of the penis is swollen and painful, it must be kept constantly buried in an emollient poultice or be fomented with infusion of poppy heads.

*Iron Internally.*—When soft chancres are slow in healing, Dr. Thompson remarks that nothing appears to hasten cicatrization so much as a mild form of iron given internally, and the potassium-tartrate appears with him to be most successful in such cases; he prescribes it in doses of a scruple in water twice a day.—*Canada Lancet.*

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**STRANGURY FROM CANTHARIDES.**—Dr. Ameuille, of Paris, has brought into notice there the Dublin mode of treating this complaint, introduced by Dr. Mulock, namely, that of giving half drachm doses of liquor potassæ every hour. Dr. Ameuille says that it acts like magic, and that he never finds over two or three doses necessary to effect a cure; it should be given in gruel or linseed tea.

**Chlorodyne.**—This is the fashionable remedy of the day; 30 drops should be given in a little water or syrup.

We have always succeeded well with tincture of henbane and sweet spirits nitre, equal parts; giving a drachm of the mixture every hour until the patient is relieved.

Dr. Wood recommends an injection into the rectum, of from 40 to 60 drops of tincture of opium in a wine glass full of starch gruel, at the same time directing the patient to drink plentifully of the infusion of linseed.

W. Cumin, in the Cyclopædia of Practical Medicine, says that in every instance it is wisest to unload the bowels as speedily as possible, and as Dr. Good recommends saline purgatives, it might be as well to give a Seidlitz powder every hour until the bowels are freely opened.

Camphor is an old remedy for strangury; it can be given in five grain doses dissolved in a few drops of chloroform and shaken with a little syrup on taking, repeating it every hour or two if necessary; or it may be applied locally to the perineum by means of hot flannel wrung out of boiling water, on which may be sprinkled 20 or 30 grains of the powdered gum; this generally soothes the pain at once.

**Vesical Injections.**—There is much difference of opinion concerning the propriety of injections of oil or mucilage in strangury, as the benefit derived is said to be more than counterbalanced by the injury done to the irritated membrane of the urethra during the passage of the catheter.—*Canada Lancet.*

*Removal of Calomel and Tartar Emetic from the Supply List.*

[To the Editor of the American Medical Times.]

One of the principal reasons given by the Surgeon-General for removing calomel and tart. antimony from the Supply Table is, "that modern pathology has proved the impropriety of the use of mercury in very many of those diseases in which it was formerly unfailingly administered." Now, if this is so—and I do not deny the fact—then every intelligent surgeon should be in the possession of such facts, and should and would avoid the giving of mercury in such cases wherein it has thus been found to be useless or injurious. Therefore, then, assuming that the medical staff of the army are men of medium intelligence in their profession, this cannot be a good and sufficient reason for excluding not only mercury but tart. antimony from the supply table. The Surgeon General does not say that these tabooed remedies are not remedial agents of acknowledged efficacy in certain diseases at all—his experience teaches him better—or that their place can be filled by any other agent or agents whatever, for his experience also teaches him that this cannot be done, but simply says these articles have been used in such a manner as to amount to abuse. I would ask the Surgeon-General, and the profession at large, if it is a good and sufficient reason that, because an article has been improperly used, henceforth it should not be used at all? If we admit this theory, we shall not only exclude mercury and antimony, but every important remedial agent in the *materia medica*. Who does not believe that alcoholic stimulants have been greatly abused, and that they have slain their thousands? Yet who would deny them on this ground to the exhausted soldier dying from the shock of a wound? No rational man, surely. Who would refuse to use chloroform because it has been abused in incompetent hands? Why, on this ground, every blessing bestowed on us by a beneficent Providence would have to be thrown aside and rejected. If it is a fact, as this circular implies, that the army surgeons are incompetent to use articles of acknowledged efficacy, for humanity's sake discharge them at once, but do not tie up the hands of the intelligent surgeon, and compel him to look on and see his patient die, when the power to save him is within his reach. In cases of inflammation of the fibrous tissues, such as rheumatic pericarditis, endocarditis, peritonitis, scleritis, etc., an experience of thirty-five years tells me that mercurials and antimony, but especially mercury, will do more to save life than all other remedies combined. The alkalies will, it is true, do something to aid in this class of complaints, but mercury is the medicine *par excellence*. It stands at the head of the defibrinating remedies, and in such cases cannot be dispensed with. It is also equally useful in acute nephritis and some of the affections of the liver, to say nothing of syphilis. In rheumatic affections of the extremities we can wait

for the action of alkalies, and in peritonitis we can use opium in large doses, but in acute inflammation of the heart, who would use opium or veratrum who understands his business, or who wait for the slow and uncertain action of alkalies? In such cases, as an adjunct, antimony is of great importance, and will do much, if properly used, to subdue disease and save life. If, as I have said before, your surgeons are not competent to fill the stations they occupy, then remove them, for, if they are not capable of using without abusing mercury and antimony, they certainly are not capable of using very many other remedial agents, or of being trusted to use medicines at all. If I were an army surgeon, I should consider such an order as a direct impeachment of my capabilities, and offer my resignation at once. Besides, this order is calculated to bring these two important medicines into great disrepute with the public, and give aid and comfort to our enemies, the quacks.

E. P. BENNETT, M.D.

DANBURY, CONN.



## *Bibliographical Notices and Reviews.*

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*A Manual of Minor Surgery.* By J. H. PACKHARD, M.D., Demonstrator of Anatomy in the University of Pennsylvania, one of the Visiting Surgeons to the West Philadelphia Military Hospital, etc., etc. With 145 Illustrations. Authorized and adapted by the Surgeon-General of the U. States Army, for the Use of Surgeons in the Field and General Hospitals. Philadelphia: J. B. Lippincott & Co., 1863.

The aim in view in the preparation of this volume has been to produce a practical Manual, to put the reader in possession of clear directions for ordinary duties of the practice of surgery. Very little has been said on the principles of surgical science, the object of the work being purely practical.

A Board convened by the order of the Surgeon-General, to examine the work, reported it as being better for the emergencies of the field than any of the treatises with which the market has hitherto been supplied.

We have taken the pains to look through this little Manual, and have no hesitation at all in indorsing very fully the views of

the Board. For field service the work is well adapted. The directions to the young Surgeon are concise, it is true, but not condensed into obscurity. They are sound, too, and if heeded, will lead to good practice. Dr. Packhard, we must say, has acquitted himself, in the line of getting up hand-books on Surgery, very handsomely.

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*A Practical Hand-Book of Medical Chemistry.* By JNO. E. BONMAN, F.C.S., formerly Professor of Practical Chemistry in King's College, London. Edited by CHARLES L. BLOEX-AM, Professor of Practical Chemistry in King's College, London. *Third American, from the Fourth and Revised London edition.* With Illustrations. Philadelphia: Blanchard & Lea, 1863.

It is now seven years since the publication of the *Third* edition of this work. During this time considerable advances have been made in Medical Chemistry : these the Editor has endeavored to represent in the concise and simple style that characterizes the text.

Chemistry is a term of rather difficult definition. Some physicists shrink from the task altogether. Perhaps we might not go far astray in saying that chemistry has for its object an explanation of the molecular action of matter upon matter, and all of the circumstances by which that action is affected. Physiological chemistry would seem to imply that the natural processes of the body are carried on on chemical principles ; and Medical chemistry would seem to imply that medicines, in the cure of disease, act on chemical principles. In either case nothing is further from the truth. Yet it is convenient to use these terms.

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## *Editorial and Miscellaneous.*

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### *Surgeon-General's Order No. 6.*

This Order of Surgeon-General Hammond has produced quite a sensation throughout the country. Medical men, in regard to it, are quite unanimous in their expressions of disapprobation. Meet-

ings too have been held, especially for the purpose of bearing testimony against it. The Ohio State Society and the American Medical Association have both passed resolutions condemning the order in very positive language. Really, the profession seem to be a unit against it.

The origin of this obnoxious order, we think, should be sought for, not by any means in anything that has recently occurred in the army. Perhaps if an antiquary were employed to look into the past a little, he might make the discovery that the Surgeon-General, a good while ago, happened to be placed in circumstances where he became impregnated with some of the heterodoxy then so rife in the land, and as a consequence this Order No. 6 is simply the announcement that he has accouched himself of some of it safely; and the hope now is that he feels better. This explanation derives plausibility from several considerations. There are those still living who profess to have had some cognizance, in former times, of certain tendencies of the Surgeon-General towards things "Botanical," "Eclectic," etc. It is said that in his younger days he looked upon calomel with not the least degree of allowance. He is represented, indeed, as having, while occupying a public position, eschewed the drug altogether, and ordered it cast out of his presence.

Granting to the Surgeon-General the possession of exalted character, there is nevertheless an assumption of authority in this order that strikes medical men very abruptly, and very unpleasantly. The order virtually says to the medical men of the army: "Gentlemen, you are not to be the judges of what articles of the *materia medica* you are to use in the cure of disease. I am your master just now, and I claim the right and will exercise it, of withholding from you two very dangerous articles, calomel and tartar emetic. I am afraid, if I allow you to use these articles, you may kill somebody with them." Until this order made its appearance, the profession imagined that the Surgeon-General's authority, although pretty broad, was not susceptible of a construction that takes away entirely the private judgment of the surgeons of the army, thus converting them into a set of mere automatons. It matters not what the masters of the profession have said in regard to the use of the articles in question, the Surgeon General must, it seems, be obeyed. The case amounts to this: a man of very common parts, dressed

in a little brief military authority, aspires to dictate to the entire Medical Profession.

The excuse for the order in question is the old one that has been in the mouths of ignorant Innovators for the last half a century—"more harm than good done." How it has come to pass that the principal officer in the medical department of our army has yielded to the pressure of one of the commonest and most transparent of sophisms, is a question that we leave the reader to solve for himself. Waiving all comments upon the weakness with which this weak officer has been afflicted, we might inquire what evidence, except the *ipse dixit* of the Surgeon-General, have we had that tartar emetic or calomel has been administered by army surgeons without the proper amount of care? We are far from claiming more than ordinary qualification for our surgeons; but still farther from joining in an implied censure of their conduct, without the most positive evidence that they deserve it.

We stated in the commencement of our notice of this Order No. 6, that it likely had its origin rather in the speculations of the Surgeon-General in former days, than in anything that has been observed touching the subject of abuse of drugs since the organization of the medical department of the army. This presumption is strengthened by the following language found in the order: "Modern pathology has proved the impropriety of the use of mercury in many of those diseases in which it was formerly unfailingly administered." "*Modern pathology*" and "*unfailingly administered*" are rather queer expressions from one who sets himself above the medical profession. The Surgeon-General designed to say, most likely, that the diseases of the present day can be as well treated without mercury as with it. Is this proposition, however, true? The Medical Profession says it is not; that there are some diseases for which calomel is *the* remedy. Here, then, we have an issue between the Surgeon-General and the Profession. The head of one or the other must go under.

An individual often passes about in community, without any one suspecting that he is a lunatic, when of a sudden he does something by which his mental condition is fully revealed, and he is at once packed off to an asylum for treatment. Between such an individual and the Surgeon-General there are strong points of resemblance. No one noticed anything in his conduct to excite apprehension, until he issued this Order No. 6. This has at

once raised the questions: "Is the Surgeon-General medically sane?" Is it right, after the suspicious phenomena he has exhibited, that he should be permitted any longer to rule over us?

In conclusion, may we not ask, why other articles of the *materia medica*—such for example as strychnine, veratrum, morphine, etc., articles in regard to which mistakes of administration are more likely to happen and more likely to prove disastrous than mistakes in the use of calomel or tartar emetic—have not been struck from the Supply Table?

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*Transactions of Societies.*—We give up a large portion of our pages in this Number to the publication of the Transactions of the American Medical Association, which met at Chicago on the 2d ult., and the State Society, which met at White Sulphur Springs.

The transactions of both show a pretty clever attendance—much larger than might have been expected, the state of the country considered. They both agree, too, in the circumstance of an absence of the usual number of reports of committees.

Just now is not the time for Societies, further than what is merely necessary to keep up organizations. It is the time for the collection of material. The time for elaboration will come by and by.

It might not be out of place to allude, in this connection, to an evil that has been growing upon our Societies for years, and that if not remedied will before long result in making the meetings thereof useless to those who attend them. We allude to the practice of continuing from year to year committees that fail to report at the expected time. It is no pleasant duty to expose the improper conduct of any one of our confreres, and what we do in this line is done with great reluctance, and merely in the *pro bono publico* way. A member of a Society, fond of notoriety but totally unqualified, manages to get himself appointed through some friend or other as chairman of a committee, without the least intention of ever making a report. At the time expected no report, but an excuse offered and leave asked that the committee be continued another year. Another year passes with the same results. Vain persons make use of our Society in this way, and have ever since its organization, for the purpose of advertising themselves.

Any one acquainted with the profession, State and National, will observe in looking over the committees for the ensuing year some very excellent selections, as good as could well have been made. But in the majority of cases no reports need ever be expected, and in some instances the reputation of the Society considered delinquency should not be criticised.

Notwithstanding the Association was better attended—seventeen States represented—than might have been expected, there were many that thought that the late meeting should, in view of the state of the country, have been still further postponed. Quite a number of the profession in Chicago shared this opinion, and declined any participation in the proceedings. Politics distract and often temper unfavorably all classes. The most discreet and judicious yield with amazing facility to the pervading excitement. Reason is impotent—religion is impotent. *Time*, and *time* alone, has the power to set all things straight. The late meeting of the Association, however, was fortunately characterized by harmony. This may also be said of our State Society.

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*Queer Fellows.*—Some one has said :

“There ne’er was a goose but, soon or late,  
Could find an honest gander for a mate.”

Poets, although not always orthodox, occasionally stray into a pasture abounding in truisms. The order of the Surgeon-General, No. 6, in regard to calomel and tartar emetic, is so decidedly at variance with science and propriety, that the profession pronounced at once against it. Still the Surgeon-General finds a few medical men queer enough to defend him. Such are not to be despised, though in sackcloth and ashes we should mourn over their presence among us.

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*Obituary.*—Dr. Saml. A. Cartwright, of New Orleans, died near Jackson, Miss., on the 2d of May last, aged 72 years. Dr. Cartwright was no common man. As an Essayist, he ranks among the first of our country. His writings are characterized by uncommon learning and judgment. He formerly practised in Vicksburgh, but for the last fifteen or twenty years he has resided in

New Orleans. Among the most brilliant of his contributions is his essay on the *Jessuca Grandiflora*.

Dr. Estep, Surgeon of the 126th Ohio, was killed on his retreat with his regiment from Martinsburgh, Va., on the 20th of June. Dr. Estep was a very worthy member of our profession, and his death will be lamented by numerous friends.

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*On the Use of Glycerine in Surgery and Medicine.* By E. J. TILT, M.D., M.R.C.P., &c.

Glycerine is not sufficiently valued in this country as a therapeutical agent; whereas the high estimation in which it is held on the Continent may be inferred from the fact, that from 1851 to 1861 the annual consumption of glycerine in the Paris hospitals rose from 300 lbs. to 3000 lbs. I propose to point out the principal advantages of glycerine from personal experience, and from that of an eminent Paris surgeon, M. Demarquay, who has been chiefly instrumental in introducing this agent, and has just published the results of his experience in an interesting little work. In the process of making lead-plaster, glycerine is produced, but, as it contains lead, it has an irritating action on abraded surfaces. The only glycerine, therefore, fit for medical and surgical uses is Price's, which is made by subjecting palm oil to steam raised to a temperature of 300° centigrade, and its specific gravity should be 1.26.

Glycerine is too well known to require description. Although derived from fatty substances, it will not combine with them, but mixes with water in any proportion, and has the power of dissolving all our active therapeutical agents about as readily as weak alcohol.

#### SURGICAL USES OF GLYCERINE.

*Pure Glycerine.*—In household surgery, glycerine is known as the best remedy for chapped hands and slight irritation of the face and lips. I have found it invaluable when freely used in nasal, pudendal, and anal irritation. It is applied in a large number of skin diseases in France; and Maisonneuve, Denonvilliers and Demarquay use it to dress ulcers and wounds, instead of cerate. It appears to have antiseptic properties, inasmuch as it speedily

gives a healthy appearance to foul, unhealthy, and even pultaceous-looking wounds. This is admitted by Baron Larrey, whose report is in other respects unfavorable to its use in surgery. Indeed, this antiseptic property might be inferred from its preserving from decomposition meat and microscopic objects that are kept in it, or have been steeped in it.

*Liniments.*—Glycerine does not become rancid, like oil. It is cleaner, can be easily washed off, and does not stain the body linen like oil. Though glycerine does not dissolve fat, it is said to dissolve the sebaceous product of the skin, and thereby to facilitate the absorption of the various ingredients which it may hold in solution. For these reasons, glycerine is far preferable to oil as a basis for liniments.

*Lotions.*—Since Mr. Startin has praised glycerine as a useful ingredient of lotions for the skin, this has been fully admitted. Its stability, cleanliness, innocuousness, and antiseptic properties make it a valuable ingredient for all the variety of lotions which are applied to the inflamed or to the unhealthy mucous membranes of the mouth, eyes, nose, ears, rectum and vagina.

*Ointments.*—When starch is boiled in glycerine the membranes burst and uniformly thicken the liquid. If eighty grains of starch are boiled in one fluid ounce of glycerine, a moderately stiff and tenacious plasma or ointment is the result. It is stable, inodorous, clean, and is capable of holding in solution or suspension all the agents usually incorporated with lard. Glycerine ointment does not become rancid like other fatty substances, does not soil the body linen, and can be instantaneously removed by means of a damp towel.

Mr. Bullock, of Hanover street, has made experiments of combining glycerine with several kinds of starch, and I lately exhibited the samples at a meeting of the Obstetrical Society. Every kind of starch makes a very serviceable product, but maize and the ordinary starch seem to give the stiffest and most satisfactory result.

It has been objected to glycerine ointment that it is too absorbent of moisture to be useful; but this is not true. It absorbs moisture only to a limited extent—suggesting to the pharmacist the advisability of not making a large quantity at a time, and of keeping it closely covered up.

Glycerine ointment has been used in France under the name of

*glycerat d'amidon.* It has been extensively prescribed by my friend Mr. Henry Lee, and by Dr. Symonds and Dr. W. Budd, of Clifton. Mr. Schacht, of the same town, wrote a paper on the subject, which will be found in the *Pharmaceutical Journal* for 1858. For the pelvic and spinal pains attendant on uterine inflammation, I frequently prescribe the following ointments: Sulphate of atropia, two grains; glycerine, half a drachm; oil of neroli, four drops; glycerine ointment, one ounce. A portion of this ointment, about the size of a small walnut, is to be well rubbed in, night and morning. Acetate of morphia, ten grains; otto of roses, one drop; glycerine, half a drachm; glycerine ointment, one ounce.

*Plasters.*—It occurred to me that by boiling a larger quantity of starch in the same quantity of glycerine the ointment might become stiff enough for all the purposes of plasters. Mr. Bullock therefore boiled 100 to 150 grains of starch in an ounce of glycerine, and obtained a very firm and tenacious compound, to which I have directed attention, in my "Hand-book of Uterine Therapeutics," as well calculated to make ready-made plasters, not open to the objections raised against those in common use, which either do not stick at all, or stick so firmly that their removal is difficult. Some of them also smell so disagreeable as to interfere with a patient's sleep, while others cause a skin irritation which was not desired. With the glycerine plasters the patient may continue using the sponge bath or any other bath that may be advisable, as there is no difficulty in removing and replacing the application. This hard glycerine ointment is capable of holding, partly in solution partly in suspension, all the ingredients of the plasters now in use. It can be made softer by being rubbed up with a little glycerine, and I tell the patient to spread it thickly with a paper-knife on gutta-percha cloth, or on the fluffy side of leather, or on impermeable wash-leather. Before reapplying the plaster it is well to spread a little more ointment, and they can be speedily cleaned with a sponge and tepid water. Thus, instead of prescribing a belladonna plaster, I order—Sulphate of atropia, four grains; otto of roses, one drop; hard glycerine ointment, one ounce. The salt is to be rubbed down with a few drops of glycerine, and incorporated with the ointment. I give veratria in the same proportion, and double the quantity of morphia. The following compound sedative plaster can be made in the same manner: Sulphate of

atropia, three grains; veratria, three grains; sulphate of morphia, eight grains; otto of roses, one drop; hard glycerine ointment, one ounce.

#### MEDICINAL USE OF GLYCERINE.

It is said to be useful in dysentery, and its antiseptic properties justify its trial in cases of ulceration and inflammation of the stomach and intestines. Experience has not confirmed the assertions of those who affirm that it acts on the system like cod-liver oil.—*London Lancet.*

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*On the Classification of Mammalia.* By Professor T. H. HUXLEY, F.R.S.

The battle-ground of classification is now confined to the orders of Monodelphia. Some will not admit the order of Toxodontia; by others the Primates are divided into Quadrumanæ and Bimana; again, others unite Sirenia and Cetacea. But it is useless to enter upon this ground, and we must ascertain how these orders may be arranged, by clear and definite characters, into larger divisions. The earliest attempts at this were made by Sir Everard Home, but his definitions were very rough and are not worth mentioning. He spoke of the characters of the placenta in different mammals. The next step was taken by Mr. Waterhouse, who was struck by the form of the brain in Mammalia, and divided the Monodelphia or Placentalia into two groups:

PLACENTAL MAMMALIA.

I. Those possessing a smooth brain. (Waterhouse.)	
<i>Lissencephala</i> (Owen).....	Cheiroptera. Insectivora. Rodentia. Edentata, or Bruta.
II. Those having a convoluted brain. (Waterhouse.)	
<i>Gyrencephala</i> (Owen).....	Quadrumanæ. Carnivora. Cetacea. Proboscidea. Peristodactyla. Artiodactyla. Sirenia.
<i>Archencephala</i> (Owen)....	Homo.

Mr. Waterhouse does not, however, mention Man. After that, in 1844, Milne-Edwards proposed another classification, based on the characters of the placenta, having, however, nothing to do with Sir Everard Home's. He pointed out four, or rather three, different forms of placentæ. In the first the villi are scattered over the

chorion; the second form has these united in knobs (cotyledons). The first is a *diffuse* placenta; the second a *cotyledonary* one; but in reality they are the same form modified. In the third kind the villi form a ring round the ovum, constituting a *zonory* or *zonular* placenta; and lastly, in the fourth it is cake-like, and is termed a *discoidal* placenta. This exists in Man, Apes, Insectivora, Chiroptera, and Rodentia. The Carnivora possess a zonular placenta. In the rest it is either diffuse or cotyledonary. (In Hyrax it simulates a zonular form.) In 1859, Professor Owen, in a paper read before the Linnæan Society, and printed in that Society's Proceedings for the year, returning to the cerebral characters, put forth another classification of Mammalia, calling Mr. Waterhouse's smooth-brained mammals *Lissencephala* (as shown in the preceding table); those with convoluted brains, *Gyrencephala*, and for Man he formed the sub-class, *Archencephala*. Now here are three classifications; which of them is the most worthy of adoption? That is to say, which explains, in the clearest and most definite way, the anatomical characters of the groups which it contains? Prof. Huxley began with the last mentioned. First of all, do the differences said to exist between the brains of *Archencephala* and *Gyrencephala*, and of these and *Lissencephala*, really exist? We shall see; and it is better to give Professor Owen's own words to avoid mistakes. These are the characters he gives to his *Lissencephala*:—"The next well-marked stage in the development of the brain is where the corpus callosum is present, but connects cerebral hemispheres as little advanced in bulk or outward character as in the preceding sub-class (*Lyencephala* containing *Implacentalia*), the cerebrum leaving both the olfactory lobes and cerebellum exposed, and being commonly smooth, or with few and simple convolutions in a very small proportion composed of the largest members of the group. The mammals so characterized constitute the sub-class *Lissencephala*."

Professor Huxley then exhibited the brains of an anteater and a capybara (both *Lissencephala*); they were abundantly convoluted. He then showed the brain of a genett (*Viverra*), nearly quite smooth, as is also that of marmoset monkeys, these being placed among Professor Owen's *Gyrencephala*, which he thus characterizes:

"The third leading modification of the mammalian cerebrum is such an increase in its relative size that it extends over more or

less of the cerebellum, and generally more or less of the olfactory lobes. . . . The superficies is folded into more or less numerous gyri or convolutions, whence the name Gyrencephala, which I propose for the third sub-class of Mammalia."

It is a puzzling thing to appreciate the value of sub-classes placed in such a position. How can a Lissencephala have a convoluted brain and a Gyrencephala a smooth brain? These distinctions may do as far as general characters are concerned, but can never form the definition of a sub-class. And now for Professor Owen's last sub-class, which he defines in the following manner:

"In Man the brain presents an ascensive step in development higher and more strongly marked than that by which the preceding sub-class was distinguished from the one below it. Not only do the cerebral hemispheres overlap the olfactory lobes and cerebellum, but they extend in advance of the one, and further back than the other. Their posterior development is so marked that anatomists have assigned to that part the character of a third lobe. It is *peculiar to the genus Homo, and equally peculiar is the posterior horn of the lateral ventricle and the 'hippocampus minor,'* which characterize the hind lobe of each hemisphere. . . . I am led to regard the genus *Homo* as not merely a representative of a distinct order, but of a distinct sub-class of the Mammalia, for which I propose the name Archencephala."

To all who understand plain language, said Prof. Huxley, the meaning of this paragraph is quite clear. When a man gives certain characters as peculiar to one group, he must mean that they are found in that and no other. The lecturer then proceeded to put before his audience facts in opposition to Professor Owen's statements. First, the backward extension of the posterior or third lobe further than the cerebellum is anything but *peculiar* to Man, as Professor Huxley showed by the cast of the interior of the skull of a gorilla (as everybody knows, the cast of the interior of the skull in all mammals gives a very good and exact idea of the form of the brain, as in them this organ fills up completely the cavity of the skull); and placing it so that the tentorial plane was horizontal, he showed how the cerebellum was completely covered by the posterior lobes, so that a plane object held perpendicularly to these cannot touch the cerebellum. It is quite easy to demonstrate this fact with the skull alone. Drawing a line from the lateral sinus to the margin of the pars petrosa—attachments of the tentorium—the

overlap is then perfectly clear. And when one comes to the lower apes, baboons, and others, it is obvious on examination that the cerebellum is overlapped to a far greater extent than in Man; and, as T. Geof. St. Hillaire showed long ago, this attains a maximum degree of development in the *Chrysotrix*—small American monkeys. The same occurs with the posterior cornu, which in Man is sometimes very short, and with the “*hippocampus minor*”—both being extremely variable. Where the posterior lobe and its posterior cornu exist, the hippocampus minor is always present; it is a prominence on the floor of the posterior cornu, formed by a pushing in, as it were, of a particular sulcus on the inner and under surface of the posterior lobe parallel with the horn. Now, all these structures certainly exist in many apes. Mr. Marshall has shown them in the chimpanzee, Dr. Rolleston in the orang, in which these structures are very largely developed, and, as Prof. Huxley showed with specimens he had, larger comparatively than in some men. The same is the case with the gorilla, and by far the largest number of apes. The lecturer said that he could not understand how, when these characters, said to exist, do not, the two sub-classes, Gyrencephala and Archencephala, can be separated; and surely, even if these did exist, no sound zoölogist would make such variable characters the basis of a classification, these being the last structures in the world to base definition on. Thus the sub-classes Gyrencephala and Archencephala fall to the ground. The structures above referred to vary so much, that in two genera of apes—the South American *Mycetes*, and, as Mr. Flower has recently shown, the Gibbons (*Hylobates*)—the cerebellum projects slightly; and in the last, one of the genera of the man-like apes, the cerebellum is so large that it projects not only posteriorly, but also laterally.

Let now more positive grounds occupy our time. Milne-Edwards laid great weight on the form of the placenta, but not on its structure—a much more important if not valid character, forming the basis of a classification which is at present the most certain. In all placental mammals examined, the formation of the placenta is preceded by a swelling and increased vascularity of the walls of the uterus, forming the “maternal placenta,” into whose depressions and sinuosities the villi of the foetal placenta dip and interlock; this takes place so firmly in some mammals that at birth the maternal comes away with the foetal placenta. These may thus

be said to have a *coherent placenta*; while all the rest, in which the foetal placenta alone comes away, have an *incoherent placenta*. As far as our present knowledge goes, this classification holds good for all, and moreover does not break natural affinities. Some say that it is unnatural because it groups together very dissimilar animals, such as men, apes, bats, rodents, hedgehogs, and shrews; but anybody who has studied the so-called Quadrumania is well aware that in them forms exist quite as low as any of these, and differing extremely in many characters one from another—from the gorilla, with a dentition, uterus, and many other organs similar to those of men, tailless and walking nearly erect, to the lemur, possessing a totally different dentition, walking on all fours, and provided with a long tail; and yet nobody has ever doubted that it is one of the Quadrumania, and certainly not the lowest, for in them we have such animals as the tarsius, the rodent-like cheiromys, and the bat-like galeopithecus, feeding on insects, and possessing an intelligence inferior to that of many mammals not belonging to that group. Another question remains: Are we justified in classifying men and monkeys together? The comparison of the human skeleton with that of a gorilla, an orang, a chimpanzee, or any of the higher apes, will answer the question, and show at a glance the great resemblance and similarity there is between them. Now the gorilla, for example, is admittedly placed in the same order as the lemur, the cheiromys, and the galeopithecus, which differ, as we have seen, far more from it than it does from man. Thus we cannot but place them in the same order, or else all our notions of affinities and resemblances fall to the ground. The following is a table giving the best classification of mammals we possess:—

### M A M M A L I A .

#### IMPLACENTALIA.

*Ornithodelphia.*  
Monotremata.

*Didelphia.*  
Marsupalia.

#### PLACENTALIA.

*Monodelphia.*

*Placenteæ Incoherent.*  
Edentata.  
Sirenia.  
Toxodontia. (?)  
Proboscidea.  
Peristodactyla.  
Artiodactyla.  
Cetacea.

*Placenteæ Coherent.*  
*Pl. zonary.*      *Pl. discoid.*  
Carnivora.      Insectivora.  
Rodentia.  
Cheiroptera.  
Primates.

*Mr. Gulliver's Hunterian Oration*—We presume that many of our readers may have seen, in some of the English medical journals, a report of the late Hunterian oration before the College of Surgeons, by Mr. Gulliver, of blood-corpuscle fame, and have been amused at the characteristic national glorification of the British scientific lion, and the forgetfulness of all other merit therein contained. The expression of contempt for American science has become so familiar to us, that like Roebuck's recent remark before the House of Commons, that we are “an insolent and upstart race,” which was received with cheers, it is now only amusing. It is not, then, because of anything novel or particularly noteworthy in Mr. Gulliver's address that we now call attention to it, but to put upon record something which really is novel and unexpected, namely, the recognition of its merits by an English journal. The London *Lancet*, in a notice of Prof. Huxley's course of lectures on the vertebrate skeleton, an extract from one of which will appear in next week's number, thus shows up Mr. Gulliver :

“The fame which Owen gave to the Hunterian chair of Anatomy and Physiology Huxley is well capable of maintaining. Belonging to a new school of anatomists and zoölogists, of which in this country he may claim the headship—critical, keen and inquiring—Huxley and his fellow-workers are doing much to promote the advancement of science. Skeptical of theories and unbending to authority, sometimes harshly disregardful of the services rendered by the most illustrious patriarchs of their science, it is part of their mission to destroy as well as to construct, and many of the ‘idols of the cave’ totter beneath their vigorous blows. Although Mr. Gulliver was gravely telling his listeners the other day that with Hunter, Hewson, himself and a few English friends, the race of physiologists had died out—and that Köllicker, Hasse, Henle, Wagner and the rest were very small fry indeed, albeit some people followed a fashion in speaking highly of them—it will be seen in the course of these lectures that in anatomy as in histology our most active English workers are progressing in unison with the Germans; and that Huxley's labors go hand in hand with those of Joh. Müller, Remak, Reichert, Hallmann and Rathke—obscure individuals, of whom Mr. Gulliver may not have heard, but who have nevertheless contributed in the most important degree to the science of anatomy.”—*Boston Med. and Surg. Jour.*

*Disinfectants and their Application to Therapeutics.*

Conclusions from facts contained in a memoir upon this subject published in the *Archives Générales*, by O. Reveil, Professeur agrégé à la Faculté de Médecine et à l'école supérieure de Pharmacie, &c., &c.

1st, That there probably exist many kinds of putrid fermentations, varying in their causes as in their effects;

2d, That there is no general disinfectant capable of being indiscriminately used in all cases;

3d, That liquid disinfectants are always preferable to others, other things being equal, when applied in therapeutics.

In their application to this purpose regard should be paid to their cost, the facility of their employment and the inconveniences they may cause by corroding, soiling or rendering unserviceable the linen dressings.

4th, The best disinfectant is that which possesses the following properties: It should—A. Instantly destroy or mask bad odors; B. Absorb the liquid or gaseous products of the putrefactive or inflammatory process, remove them by washing and destroy the poisonous or irritating action of morbid liquids and mephitic gaseous products; C. Prevent the formation of new infections or mephitic products; D. Hasten the cicatrization of sores, by giving the necessary vitality for the reparation of the tissues.

5th, Chlorine, and solutions of bromine and iodine, appear to best fulfill the most important of these conditions.

6th, Chlorine, or at least the hypochlorites, by reason of the gaseous state of their active principle, ought always to be preferred when it is desired to destroy miasm and disinfect the air.

7th, The addition of odorous essences, and principally of nitrobenzine to the hypochlorites and to iodine and bromine-water, acts both to mask the disagreeable odors and to set into immediate operation the chemical action.

8th, Tar and coal-tar preparations are able to render effectual service, but they do not possess the property, like iodine and bromine, of destroying the poisonous action of morbid products and putrefaction, or that of various kinds of virus.

9th, *Charpie carbonifère*, especially *charpie carbonifère iodée*, may be often employed with success.

10th, Carbon, in addition to its absorbent properties, appears to

exercise *an action of special contact*, in virtue of which it hastens the destruction of organic matters, or rather, as M. Stenhouse states, according to the experience of Turnbull and Turner, by condensing the oxygen of the air, and thus acting as spongy platinum.

11th, Metallic solutions (salts of iron, zinc, &c.), although imperfect disinfectants, suffice in a great number of cases.

12th, Physical and mechanical agents (ventilators, &c.) may be made powerful aids to chemical disinfectants.

13th, There are some causes of *infection* which appear to resist all treatment (ozæna, otitis, &c.).

14th, We should add, moreover, that there are causes of *infection* which it would be dangerous to suppress (*suer infecte des pieds*), and the odor of which we should endeavor to mask.

One is struck with admiration on reflecting upon the processes which nature employs to disseminate, transform and reproduce organic matters ; in the presence of the grandeur of these facts, we remain convinced of the exactitude of the aphorism of Lavoisier : “*Dans la nature, rien ne se perd, rien ne se crée.*”

M. Reveil alludes above to the so-called fœtid foot-sweat, and thus sustains a popular error both of pathology and therapeutics. Fœtid foot-sweat does not exist. The perspiration is always fresh when secreted, and any peculiar individual odor is due to specific modifications in the sebaceous matter. It is only when the sweat has undergone decomposition upon certain portions of the body peculiarly adapted to such change, as the axillæ, beneath the mammae, between the folds of the perineum, &c., that the fatty acids thus formed give rise to a fœtid odor. So, too, when the feet are not frequently cleansed, and heavy coverings are worn upon them, the boot is apt to absorb the odors thus produced, and to become in turn the real offender. We have noticed this peculiarly disagreeable smell about the persons of several officers returning from the army, where thick stockings and heavy top-boots are worn day and night without change for a considerable time. The idea of any dangerous consequences following simple cleanliness, which is the only disinfectant required, is absurd. The worst case of fœtid foot-sweat may be cured at once by casting away the stinking boots, and substituting thin stockings and light boots or shoes, and by washing the feet every day in soap and water.—*Ibid.*

*Cold and Wet a Cause of Camp Disease, and its Modus Operandi.* By C. A. HUNT, M.D., Surgeon of 126th Regiment Ill. Vol.

My sanitary report of March, having been suggested by the Medical Director for the consideration of the Society, and myself being appointed the essayist, I take the occasion to make the report conform to the nature of an essay, with more extended remarks in relation thereto.

Just at this period of the season, following a cold and protracted rain, I noted the following effects of it upon my own regiment, while stationed near Jackson, Tenn. There were about twenty-five taken off duty with the following peculiarity, in nine companies remaining in this one camp: About ten had cold and cough, or catarrh; six took *pneumonia biliosa*; two *pneumonia typhoides*; two bronchitis with aphonia; one an intermittent, and about five with diarrhoea. In the one company stationed four miles south of Jackson, on the railroad, had nine taken sick at the same time, in which one case assumed the form of a remittent type of fever, and eight that of dysenteric flux. In this connection I draw the attention to these various cases, all arising from one cause, for two purposes: one, to show how single may be the exciting cause, and how great the variety of results under precisely the same circumstances, and, secondly, to impress the fact, that cold and wet are causes sufficiently forcible in action upon the body to induce nearly all the common diseases of camp life. I do not say that it does do it, especially during warm weather, but only speak of its efficiency during the seasons of their prevalence in combination, and upon that basis will show by what means, and through what channels, the various results are brought about.

I now propose to call attention to that part of my subject; not designing to argue the special production of any one disease, or class of diseases, but to set forth the general tendencies and common results, as applicable to any disease, which can result from sudden abstraction of heat followed by intropulsed fluids, and wish incidentally to say, that the subject has been neglected by the profession, who have been satisfied with *phenomena* alone, without being arrested by the very great importance of estimating the causation, and the paramount necessity of guarding against these agencies so common around us.

The phraseology of *taking cold* is familiar to all of us, and is even the expressive term used by literary men, derived from the common notion that they have imbibed *cold* which has found a location in the body, as it existed out of it, and like the kindred phrase of drawing out fire after a burn, has passed down into a fireside axiom.

The question, in its philosophic sense, comes up, how do we take cold? We evidently do not contract it from water, or dampness, or from the air, or from the earth, because all these elements, or partitions, of the habitable globe, are populated with birds, fishes, animals, and insects, constructed as we are, of the same constituents, of the same organic relations, and breathe the same air, drink the same water, and live upon the same food, and pass through the same process to dissolution, and yet they are not affected by it. There is nothing in air or water which, in themselves, are poisonous, or causative of disease. The whole explanation lies in the sudden abstraction of heat from the body, to the extent that *the organic forces of the economy become a deranged relation to the matter of which the body is composed*. This is effected in two ways: First, by conduction, and second, by evaporation. The process of conduction of the heat is carried on by the contiguity of damp clothing, together with the contact of air charged with floating vapor. The clothing, which when dry is porous and a poor conductor of heat, but when wet has its porous interstices filled with watery particles, to the extent that a complete surface and uninterrupted sheet of conducting material is thus presented to carry off the heat of the body, and superadded to this silent, continuous contact, there are globules of air constantly picking up and bearing off the particles of vapor which have become warmed by the body, and substitute such as are cold. But when evaporation supercedes conduction, or both operate together, as is common, then the cooling process is still more rapid. For each globule of air feels itself especially commissioned to fill its little canteen with its 1,000° of heat, and on its pinions seek the moving gale, or the lungs of some adjacent plant or tree. In this way the air becomes very officious, at the same time, in reducing the heat of the body; for while each air particle is expanded and moving off with its caloric balloon, freighted with the warm vapor, into greater altitudes, the cold air is rushing in to fill

the place, and again flies off by the expansive levity which it borrowed from the body itself.

Those medical men who have had occasion to use cold lotions to imflamed parts can comprehend, to some extent, what would be the result should they apply that same lotion to the entire body at the same time, for such is the effect of wet and cold, after a cold rain, or cold following rain. What is the result of its sudden application? It causes a sudden intropulsion of the fluids of the exterior in upon the interior organs, which of course become not only overcharged with recrementitious matter, but also of a remora of blood, which was due to the capillary surface. To compensate for this *physiological result* (for it is yet physiological), the interior organs are forced into a vicarious action, in order, in some way to equalize the effect and pressure. This physiological action, however, I do not array here as being any part of diseased action, but it is a normal process so excessive in extent that disease often results, not from the influx of the recrementitious matter, but from the remora of blood producing overdistension of some local capillary network. The intropulsion of the recrementitious secretion of the dermoid tissue must become of very feeble importance in the chain of abnormal phenomena, for the reason, that the secretion itself is not vitiated when it retreats from the surface, and cannot become so after the blood retreats, for the secretion is suspended until the blood returns.

If it be meant that the effete atoms of the worn-out tissues are thus productive of disease, when thus suddenly driven in from the surface, I would say that the position is equally fallacious, for the same reason that the process of repletion and waste is also suspended, and there is no excess. And the idea that the changed relation of the fluids of the body from one part to another, as a cause, is of itself untenable, because the organism is in constant process of such changes, in winter and summer. That process is experienced by the diver into cold water, by the aeronaut in the suddenly rarified air, also by persons descending into wells and ice-houses, during summer, etc. These physiological actions must not be looked upon as causative, but only as a normal process by which, and through which, and after which, disease does not occur.

To illustrate that point, I will introduce an engine with two boilers, with steam enough on to run a given weight in a mill or

train. I connect the boilers so that they communicate with each other. I am under way, in full motion. I now bring suddenly in contact with one boiler cold enough to bring about sudden condensation of the steam back into water. The sequence of that abnormal act is this: when the condensation occurs, and a vacuum is formed, the steam forces the water from the other boiler into it until by oscillation the equilibrium is restored. But the engine stops. Why? Not because of the change of the fluids from one boiler to another; not because of an influx or remora of fluid into the first boiler, but because of the changed relation of the *heat* to the *matter, water*, which propelled the engine. What was lost in this process? Not *water*, but *heat*. The *heat*, then, we observe, is the moving power, and not the water, the latter being only the receptacle, or agency, in effecting motion to other matter. Now it must not be lost sight of, that this same heat is the moving power in the animal economy, as well as everywhere in the known universe. I will state a basis of all pathological, as well as physiological action, upon which rests all the causative agency of all diseases, and it applies to all circumstances; it is this: No *diseased action can begin or exist*, except by first a *deranged relation* of the *organic forces* to the *matter of the body*, or a *changed relation of the matter of the body to the forces*. When I speak of forces, as applied to animal or vegetable, I mean heat and light, and their transitions into electricity and magnetism, and when I speak of matter, I mean the material structure of the body, whether gas, fluid, or solids. It is the heat power which effects motion, and the light, identity of place and function. I will explain this point. If any circumstances shall change the heat and light which would be required to perfect the growth of a tree, the tree would decline and die. If, on the other hand, we girdle the tree, so that the fluids are changed in their relation to the forces, light and heat, the tree also dies. Hence, it seems to me plain, that in order to have integrity of life and health of this tree, there must be the proper integrity of both the forces and the matter. If either fails to be perfect, disease must occur, and probably death. Precisely this condition, and these circumstances present themselves in the vegeto-animal economy, except that both are required in greater abundance, because of greater waste. The importance of the production of these two forces may be better estimated, when it is considered that all motion of mind and body is due to one, while

the replenishment is due to the other ; the matter being furnished. Now when this heat of the surface was suddenly consumed, as it was in the one boiler, it became necessary to have it as suddenly restored, if possible, in order to prevent a cessation of function. Hence the heart immediately puts on the construction train, and the new material, containing a large supply of oxygen, is blindly yet vigorously furnished to the exterior, to supply the defect as soon as possible, and when the entire surface is reached, there appears an excessive action. Suddenly, instead of the pallid surface and blanched countenance, and small pulse, and dry, cold skin, and general suspension of dermoid secretion, we now have a *hot skin, tumid face, high pulse, hurried and suffused countenance*, the capillaries now over-distended with blood, the secretory cells overpowered with excess of the same, which still suspends secretion. This is a condition which has got the name of *Fever*. I will not stop here now, to treat that topic, however.

The assimilative functions, which hold their laboratory in the extreme capillaries, also suffer diminution in the same degree. Here are atoms of matter, all through the tissue, which have become effete, but not yet cast off to give place to the new matter ; but, on the contrary, are yet in the cell-wall and subject to the action of oxygen, which *partially* acts upon them. Although the abnormal relations now existing between the oxygen, the blood capillaries, and absorbents will not resume function yet so much as to consume these atoms, so that they can be dissolved into fluid and be carried away ; but they are oxygenated, and, while under this process, are giving out excess of heat, not to be expended in normal motions, or not to be taken up by the excretion of the skin, for it is checked, or not to be consumed by the dissolving atoms into water, for they do not dissolve ; but to be spent upon *remote parts* as well as *adjacent parts*, and out of it may appear arterial excitement, wild mental action, muscular excesses, spasms, diarrhoea, cough, delirium, etc., etc., all of which are results of excessive action, evinced in the inordinate expenditure of heat ; for, it must be observed, that the heat generated must be expended and compromised somewhere in the economy, and any abnormal or excessive action or motion is the evidence of excessive heat, whose expenditure has devolved upon that part for want of ready equalization. Could the worn-out atoms be liquified as fast as burned, or partly burned, the function of repletion would not be checked,

and the process of food-taking in disease would not be checked by first checking the appetite; nor could there be any abnormal action when the office of waste and repletion is in balance.

The disturbance in this balance is the derangement of the matter of the body to the forces; for, when atoms of tissue are not broken down, and elimination, of course, there can be no place for new matter, and no demand. Now, this process of overheating is a reaction upon the previous abstraction of heat. This is a general process; and the true phenomena, though not always in the same degree, is as plain as the phenomena of the two boilers.

Every disturbance in the motion of either solids or fluids is caused by a disturbance in the heat force, and a derangement of the force in relation to the fluid or solid. What is the whole process of changing atoms, either in act of deposit or waste, in secretion or excretion, in production or re-production, but the new relations of matter, which, if presented to the forces always the same, must be attended with the same results, provided the forces are normal also. The process of oxygenation of the effete tissues must be either partial or complete, if acted upon at all, and in this process lies the most important to health of any physiological act in the economy. We observe, and it has escaped no physician, that the effete atoms are not removed, except in a slow process, during disease; and, in our lingering constitutional diseases, such as, for instance, typhoid fever, the oxygenation is, at first, more active and the heat higher, yet the tissues *do not change place*, and there is no call for repletion.

After a time, the oxygenation becomes more difficult—the fever and heat declines—still there is no change; and not until the crisis is formed, and the cell-walls give up their dead, and the old atoms begin to pass off, do we see the cheeks sink in, and emaciation become general, that the appetite arouses and repletion commences. This process of waste and repletion is the controlling function of the organism, and becomes, or is likely to be, effected by the action of cold, or by any other means by which the *forces* and the *matter* become deranged. I will not dwell longer on this most interesting topic, all of which has an especial bearing on disease.

This effect is the process, occurring wherever fever exists, or any other constitutional affection, which so generally involves the many functions of the body; and, I wish here to be understood, that the general fever does not cause this general assimilative disturbance,

but that fever is the result of it, and is *symptomatic of it*. Fever has no individuality, no more than *any other disease*; but they all result from a chain of deranged phenomena, in which the process of waste and repletion are paramount in the line of causation. Now, upon this intropulsion from sudden cold, the common laws of natural order prevails, that of *contraction where heat is not*, and *expansion where it is*; hence the first contractile impress is made right where colorification begins upon the surface. We now have the intropulsive; and remora takes place in capillaries of some internal organ—say the lungs—but, upon reaction, this remora ceases before permanent hyperemia occurs, except, probably, in a circumscribed patch of tissue in which inflammation or congestion, and, finally, suppuration occurs.

Now, I ask, why did not healthy action proceed after this first engorgement, or after the hyperemia became permanent? There was no trouble now in the heat and light, for the heat has become really in excess, and just as ready to act legitimately through that spot as any other. It is this. The matter there has now become deranged, as relates to the forces. First, the forces were deranged, and now a succession of phenomena has arisen, by which the matter is deranged to the forces, and death of the part, or *local death*, has occurred.

While the effete atoms are in process of combustion and heat is being generated, the skin would soon lower the heat were its functions not arrested by the same act. More than that, the liquifying the solids is also a cooling process, for no solid can become fluid without the absorption of much heat, and in this process much of the excess of heat would be equalized, were it not for the fact, that these atoms are not thus liberated from the cell-wall or liquified. That process too is arrested; and the vicarious act of disposing of the forces is greater than that of disposing of the deranged secretion or supposed peccant humors.

As to the production of disease, it matters not whether the heat of the body is suddenly abstracted in one part, and the elements of the body inordinately taxed to reproduce it, or whether, by the reaction, occasioned by the supply of heat, has so deranged the cell function that the effete solids can be oxygenated and not liquified. In both cases, the derangement of the organic forces—*light and heat*—are disturbed, in relation to the matter, the same as the heat to the water in the engine. On the contrary, should

I choke up one boiler with foreign matter, or contract the boiler to half size, then the engine would also stop, for I would change the relation of the matter to the force. In either case, the condition of those relations will be manifest all the way through, until the identity of the organism shall be destroyed. This brings me back to the text, that the sudden abstraction of heat by *cold and wet* (which is the same in effect) produces disease, either by deranging the forces to the matter or the matter the forces; and that the mere change of the fluids is not the *cause of disease*, but one process in the chain of results. Why does this process of concentrated action so often develop disease in the mucous membrane and parenchyma of the lungs? The principal reason exists in the yielding character of those tissues which have not elasticity enough to regain their lost condition from the remora. In this stage of remora the vessels become charged with blood, and eight-tenths will, upon reaction, resume their pristine level; while one-fifth will remain with distended vessels, some parts of which may run into inflammation, and others into congestion.

I would here beg leave to say, that although pus forms during a low inflammatory process, it is equally certain that the same vessel in which it forms becomes congested, or relaxed, and over-distended before the exudation period. This is the changed relation of matter to the forces. Again, the mucous membrane is more obnoxious to this intropulsion, because it is slowest in throwing off excessive influx of extraneous fluids, and slowest in its secretion and excretion. It is the most yielding tissue in the body to vascular pressure. So yielding is this tissue to distension, that I doubt if true inflammation ever is developed in it, unless the adjacent tissues are equally implicated. Congestion, following remora, is, undoubtedly, the pathological condition of the diseases which are developed in it. These two are the accumulated evidences of changed matter, in relation to the forces.

I do not mean to assert that the changed relation of forces all proceed from sudden extraction of cold. On the contrary, the act of taking cold or catarrh is often produced in dry, warm weather, and while in the house. This is owing to the electrical or magnetic condition of the air, which controls the *organic forces* of the animal system. Instances of this meteorological influence upon the organic forces is shown in all the animal world, not only during disease but in health. In a word, the *forces* of the economy are

directly in relation to the process of *combustion within the body*, and the forces and vicissitudes of all nature without the body; while the matter of the economy is in direct relation to the food consumed and the process of aeration.

The abstraction of *heat* then, to the extent of organic derangement, first involves the *forces* by which the circulation is deranged; succeeding to this, consecutively appears in some locality, a disease in the solids, in which appears deranged matter. This diseased spot then being beyond the reparative process of repletion and waste, fails to develop the phenomena of life any longer, and must drop into other relations common to decay.—*Chicago Medical Examiner.*

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*Lawson on Phthisis Pulmonalis.*—We have just received the last number of the *British and Foreign Medico-Chirurgical Review*, in which we find a lengthy and very favorable review of Dr. Lawson's work on Phthisis. We feel gratified that our neighbor has received so appreciative a notice so far from home. We are not aware what efforts have been made by the publishers to push the sale of this book, but we believe that our readers who buy and read it will thank us for our commendation. Of course, we cannot make any lengthy quotations from this review, but we give the concluding paragraph as manifesting the kindly spirit of the whole:

"In parting from our author, though we cannot enter into all his hopeful views of the cure of phthisis, yet we can most willingly express the satisfaction we have had in the study of his work: our analysis of it, imperfect as it is, would not otherwise have been so lengthened. No subject in medical science has been more productive of monographs of high ability than this disease—of monographs which have become classical. We have some confidence that this work will rank amongst them. For acuteness of observation, for sober discrimination and sound judgment, and fair criticism of the writings of others, and especially of contemporaries, and for the wide knowledge which it displays of the literature of his subject, we know few books superior to it. We bestow our praise the more readily, our author being an American; yet though an American of Anglo-Saxon race, as his name implies, and one who we trust will, with all his right-minded countrymen, still cherish a love of the stock from which he has sprung, abhorrent of the vulgar clamor

sadly now prevailing against England, as if the American States, whether united or separated, Federal or Confederate, had not with our country a common interest, apart from the community of blood, that of language, of literature, and of laws."—*Cincinnati Lancet.*

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*Statistics of Ovariotomy.*—At a meeting of the Obstetrical Society of London, March 4th, Dr. Clay, of Manchester, gave a brief and interesting outline of his experience in this very important branch of surgery. Of 109 peritoneal sections, 104 were for ovarian extirpation, 3 for cutting down upon the tumor to establish ulceration where its removal was known to be impracticable, 1 for Cæsarean operation, and 1 for the removal of both uterus and ovaries. Of the 104 ovarian cases, 72 recovered, 32 died; all the 3 ulcerative cases recovered; the Cæsarean section lived to the fifteenth day; and, lastly, the case of the entire removal of both uterus and ovaries recovered. Of the 32 deaths, 10 died from the immediate consequences of the operation, 10 from inflammation, 10 from prostration, and 2 from haemorrhage. The great majority of the first and second series were young females, as well as a portion of the third division. Those from prostration were chiefly elderly females.—*London Lancet.*

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*Two Recent Cases of Ovariotomy in France.*—M. Valette, of Lyons, lately performed the above mentioned operation on a patient 38 years of age. The lady had applied to M. Valette about four years ago, and, after repeated tappings, had been brought by the disease to so low a condition that the surgeon was obliged to consent to the operation of ovariotomy, loudly demanded by the patient. The latter died soon after the large cysts were removed, and M. Valette attributes the fatal issue to the shock of the operation, as there was neither peritonitis nor haemorrhage. He determines that in his next operation, opium and stimulants shall be more largely used. The *Gazette des Hôpitaux*, of the 14th of February, also states that the patient on whom M. Nélaton lately performed ovariotomy has died. No details had then transpired. M. Velette's case is fully reported in a late number of the *Gazette Hebdomadaire*.—*London Lancet.*

*Population of Spain.*—For the first time a general statistical review of the movement of the population of Spain has lately been published. According to this, the number of births for the past year was 571,186 ; of deaths, 432,067 ; of marriages, 126,893. The statistics fail to give the total of the population ; they only record one birth in 27 inhabitants, one death in 33, one marriage in 129 ; according to which the total number of inhabitants would be 15,500,000.—*Ibid.*

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Jan. '62.

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jan. '62

# STARLING MEDICAL COLLEGE,

## COLUMBUS, OHIO

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FOR THE SESSION OF 1863-64.

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The next session of Starling Medical College will commence on Thursday, October 15th, 1863, and will be continued until the 1st of March.

The Dissecting rooms for the study of practical Anatomy, will be open from the commencement of October.

The Museum of the Institution has been made very attractive by late receipts from France and Germany.

The College building is in complete order, the east wing having been entirely completed.

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S. M. SMITH, M.D.,

Professor of Practice of Medicine—Physical Diagnosis.

FRANCIS CARTER, M.D.,

Professor of Obstetrics—Embryology, Diseases of Women and Children.

JOHN DAWSON, M.D.,

Professor of Anatomy—Microscopical Anatomy and Physiology.

J. W. HAMILTON, M.D.,

Professor of Surgery—Eye and Ear Surgery.

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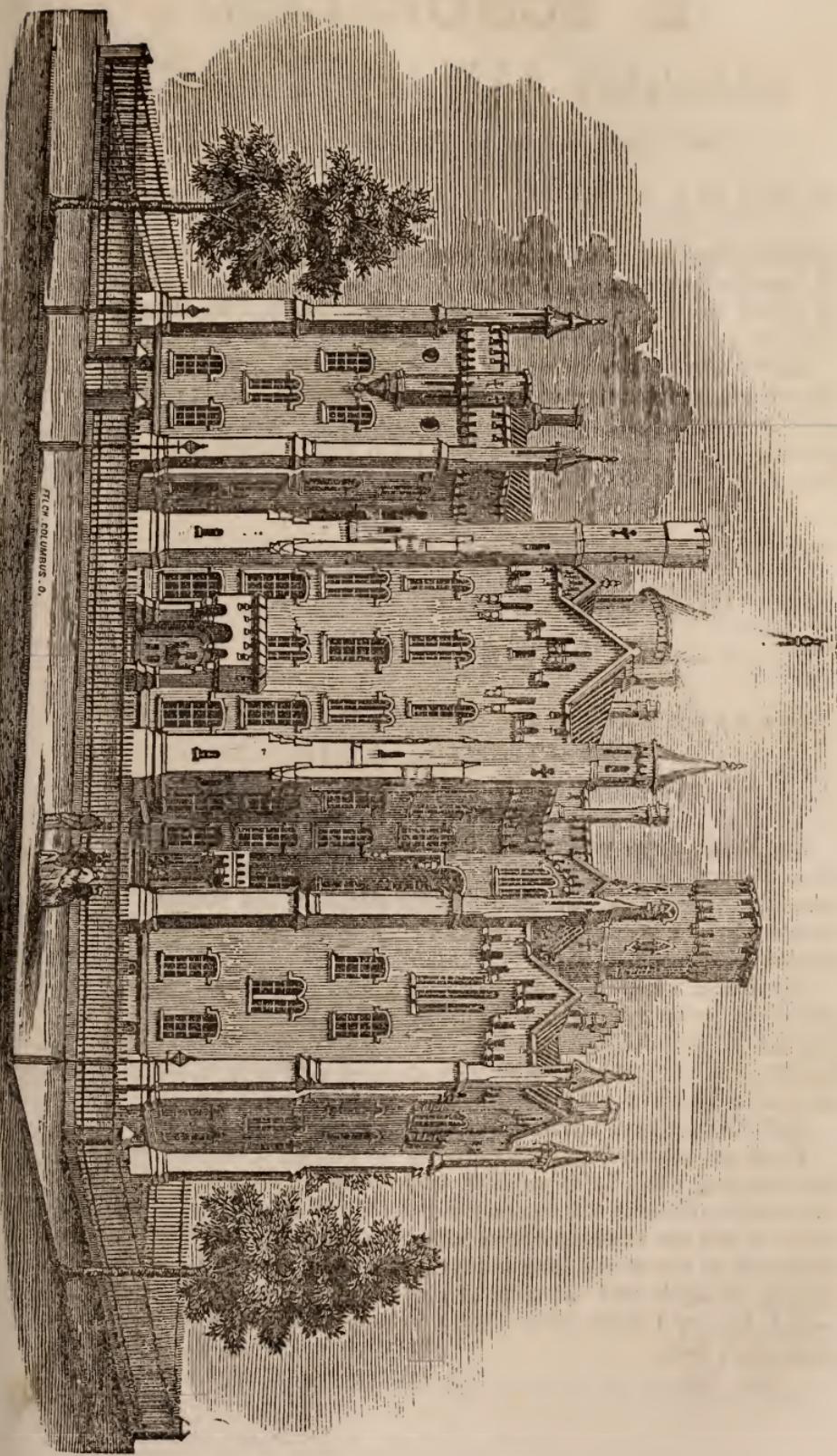
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jan. '62

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SURGICAL INSTRUMENTS,

BY K. KLOTT.

BETWEEN RICH AND FRIEND STS., WEST SIDE,  
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J. DAWSON.

jan. '62.

# O H I O

## MEDICAL AND SURGICAL JOURNAL.

Vol. 15.

Columbus, September 1, 1863.

No. 5.

### American and Foreign Intelligence.

*Remarks on the Mummied Heads taken from the Jivaro Indians of Ecuador, with an account of the various modes of Embalming, being an abstract of a paper read before the American Ethnological Society.* By J. KING MERRITT, A.M., M.D., of New York.

#### PART I.

I desire to call attention to two mummied heads of diminutive size, which, with a number of others, were recently obtained from the Indians who inhabit the inaccessible and mountainous region around the base of the volcano of Sangay, in the province of Chimborazo, where the old Spanish town of Macas is situated.

There were ten of these specimens taken from the Indians, so far as I am informed by Mrs. Hassaurek, the wife of the American Minister at Ecuador, through whose kindness I am allowed the privilege of presenting these curious objects, with the accompanying history and description of them.

Mrs. Hassaurek states that these ten mummifications are in the possession of the following parties, viz.: four were bought by Mr. Hassaurek; three by the Spanish Minister, who sent them to Madrid; two by the French Chargé d'Affaires; and one by the English Consul. Of the four obtained by Mr. Hassaurek, one is retained by himself, and one he presented to a Dr. Mackay, who is in Washington at present, and has been exhibiting his specimen to the savans of the Smithsonian recently. The remaining two are those under our consideration. I am told by Mrs. Hassaurek that there is a tradition among the Indians, that these heads were originally taken from "Huacas" \* belonging to their ancestors,

\* "Huacas" are the cemeteries and holy places of the aboriginal races of Peru.

many generations ago, and that since they have been kept in their huts, preserved with great veneration, and jealously guarded as household divinities. An additional statement is given concerning the history of these interesting and mysterious heads, in a communication from Mr. Hassaurek himself, who sent them from Quito to this country last summer. He writes as follows:—  
“These heads were formerly in the possession of the Indians who live in the town of Macas, which was anciently of great importance, but has since decayed, owing partly to the general decline of Spanish America, partly to the ruinous policy of the Spanish Government, and partly to the unmanageable character of the Indians. It has always been observed that the Indians of Macas treated the heads with a veneration verging on idolatry. I was told by a former Governor of Chimborazo, to which province the town of Macas belongs, that the oldest Indians in the country did not recollect the time when these heads were *not* in the possession of their tribe. They said that a great feast was given every year in their honor, when the old men approached them with great submission, having their lances pointed downwards, while the young men remained within a respectful distance. Concerning the threads which are attached to the lips, I have heard various and contradictory accounts. Some say they indicate the number of enemies slain in battle by the warriors to whom these heads were attached. Another account is given by Dr. Andrade, the Curate of the village of Machuchi, who says that these heads were treated as idols by the families which possessed them, and they attributed to them many supernatural qualities. They especially implored them to keep their family secrets, and for every secret intrusted to the idol a string was drawn through the lips. Others say that the strings are only ornaments, because the Indians on solemn occasions wear these heads suspended around their necks, and consequently the pendent strings were intended to improve the appearance of them. The art to contract the heads to such a wonderful miniature size seems to have been lost, like so many other arts known to the ancient Peruvians; as, for example, the cement mixture which they used for building purposes instead of lime mortar, that gave to the different stones of which the walls were composed the appearance of one solid block. How these heads in question were contracted to such a diminitive size, I can only repeat rumors; one is, that they were contracted by hot stones or pebbles, which were put into the cavity of the head after the bones were removed; another is, that they were contracted by a process which occupied a year. The aforesaid Dr. Andrade says, ‘that if one should be the head of an enemy slain in battle the victor will do penance for the time necessary in the preparation of the head, that he fasts and prays to atone for the deed, but when the head is mummified he then adopts it as an idol. There is not, however, any account of such heads being prepared in these times, but they are considered relics of past ages, which have been handed down from generation to

generation. All these statements and traditions may be considered as imperfect, or suppositions of the present day. But, nevertheless, this is certain, *that these heads were in the possession of the Indians at Macas, by whom they were treated with great veneration.* I bought them of the present Governor of Chimborazo, *who undoubtedly had forcibly taken them away from their owners.*' Mr. Farrand, who has been a number of years in Ecuador and Peru, and has traveled much, informs me 'that the Indians at Macas and the vicinity do not have at the present time any intercourse with the Spanish population, but carry on a traffic with an intermediate friendly tribe, called the Napos, who maintain a trading intercourse with them.' He also states that he has heard there is not a white person now in the town of Macas."

The Indians of this section speak their native original language, and practise their ancient manners and customs. They belong to that fierce, warlike, and proud Jivaro family of Indian tribes, which were never conquered by the Incas. At the time of the Spanish conquest, however, most of the tribes of this intractable family were partially subjugated. The tribe which inhabited the region around the base of the volcano of Sangay, and on the banks of the river Morona, were so unfortunate as to have in their country abundant deposits of gold, and consequently the attention of the "Conquistadores" was attracted to these. Soon their country was overrun, and the town of Macas built, which is situated on the river Morona, one of the branches of the sources of the Amazon, and is 130 miles southeast of Quito. Macas is also but a short distance from the volcano of Sangay, which is one of the most active volcanoes on the globe at the present time. The Spaniards never attained complete control over the Jivaro Indians, nor to any extent civilized them. They remained sullen and uncompromising, and when, on the decline of the Spanish dominion in Peru, the opportunity offered, they drove from their country the remnant of the intruders, and relapsed into their original independent and isolated state. They are described as being quite small, but very active and muscular, with black and very animated eyes, and with bent noses and thin lips. They use the lance with remarkable dexterity, and the shield exceedingly well.

Wm. Bollaert, F.R.G.S., in a brief paper on the idol heads of the Jivaros recently published in the *London Intellectual Observer*, thus speaks of this people and these deified heads:—"They are an ancient and warlike people, and their history is given by Velasco, the historian of Quito, together with an account of their conspiracy against the Spaniards in 1599, an outbreak which procured for them the title of 'Araucanos' of the North. At that period they made the Governor of Macas prisoner, and killed him by pouring molten gold down his throat; afterwards they destroyed the Spanish settlements in their part of the country *in one day*, killing the men, but taking the women into captivity. In modern times many expeditions have been organized to punish them, but

all have failed. The Jivaros are a warlike, brave, and astute people; they love liberty, and can tolerate no yoke. Many have beards and fair complexions, most probably arising from the numbers of Spanish women they captured in the insurrection of 1599. They have fixed homes, cultivate 'yucas,' maize, beans, and plantains, and their women wear cotton cloth. They live in well built huts made of wood, and sleep in fixed bedplaces instead of hammocks. Their lances are made of the Chonta palm, the head being triangular, thirty to fifty inches long, and ten to fifteen inches broad. They are accustomed to take a strong emetic every morning, consisting of an infusion of the 'guayusa,' or tea plant, for the purpose of getting rid of all undigested food, and being ready for the chase with an empty stomach. Their hair hangs over their shoulders, and they wear a helmet of bright feathers. Their branch tribes are constantly at war with each other; all the tribes speak the same language, which is sonorous, clear, and harmonious, easy to learn, and energetic. At each village they have a drum called 'Tunduli,' to call the warriors to arms, and the signal is repeated from village to village. When engaged in war their faces and bodies are painted, but during peace they wear breeches down to their knees, and a shirt without sleeves. One of their prominent customs is to deify the heads of their prisoners. This fact has been known for some time, but only lately have any specimens been obtained. The first was brought to Europe by Professor Cassola in June, 1861, and was exhibited to a few persons in London. This had been stolen from a temple on the river Pastasa. At the latter end of the same year another specimen fell into the hands of Don R. de Silva Ferro, Chilean Consul in London, with an explanatory document, which has been translated by Mr. Bollaert, and communicated to the Ethnological Society, together with some account of the Jivaros themselves. An idol head was obtained through a baptized Indian, who persuaded a Jivaro notorious for ill luck that this was occasioned by the imprisonment of the idol, who was desirous to travel. The Jivaro handed it over for this object, when it was taken to the Governor of Chimborazo, who sent suitable presents to the Indian in return for his interesting gift. These curious trophies are thus prepared, according to tradition:—After a war the heads of the victims are cut off, the skull and its contents removed, and a heated stone (*it is said*) is introduced into the hollow of the skin; desiccation goes on, and it is reduced to one-quarter its original size, retaining some appearance of the features. A feast ensues, when the victor abuses the head roundly, to which the head is made to reply in similar terms—the Indian priest being the spokesman for the head, or 'chancha' (an Indian name for a sow), and he concludes his part thus:—'Coward, when I was in life, thou didst tremble at the sound of my name. Coward! some brother of mine will revenge me.' The victor at this raises his lance, strikes and wounds the face of his enemy, after which he sews the mouth up, dooming the idol to

perpetual silence, excepting as an oracle ; questions being put to it when the inquirer is under the spell of a narcotic. When the Jivaro is pressed by the enemy, and has not time to cut off the head of an enemy, the ceremony is performed on the head of a sow, which is adored as a real idol head. Should the fruits of the earth not be in abundance, the women hold a feast of supplication to the head, and if their request is not granted, the hair is shaved off and it is thrown into the woods."

This is all the history concerning these heads which I am able to give with the brief accounts of this people, and of the locality whence they came. I will now proceed to describe succinctly the heads which are in my possession. But first, I may be allowed to indulge in a portraiture of the general appearance of these specimens of mummification. We see a head and face scarcely the size of a half-grown howling monkey, with a great profusion of long, lank, black hair ; also, we see a fierce and sooty pigmy face, decorated with a dingy tassel of cotton cords pendent from its compressed and protruding lips, and wearing the scowling expression of a Comanche warrior. If one can realize such an object, he will entertain an idea of the first impression received by a casual observer. Though these nondescripts are novel and startling to ordinary observation, still more do they become mysterious and wonderful as one examines and studies them. I will here mention some of the peculiarities pertaining to them. 1st. The size of the entire head and face is about equal to the medium fist of a man. 2d. The osseous structure, the brain, the eyes, the tongue, and all the inner soft parts, except the muscular tissues in close connection with the integuments, have been removed. 3d. The external surface of the integument is jet black, and of polished smoothness, without the least appearance of shriveling, and retaining in a marked degree the character of human skin. 4th. The tissues of both head and face are hard and unyielding as ebony, and emit a sharp and almost metallic sound when percussed. 5th. The inner surface of the cranial wall is knobby, spongy, and mouldy, with the pale color of undressed leather, as seen through the large opening at the base of the head, at which point it was severed from the body. 6th. The decapitation was rudely performed with a dull instrument (judging from the jagged edge of the incision), at a point of the neck anteriorly corresponding to the top of the thyroid body, and posteriorly at somewhat a lower level, so as to include with the head that portion of the nucha which is ordinarily covered with hair in man. 7th. The general configuration of the specimen is as follows :—the head and face are exceedingly narrow, but quite long in their antero-posterior axis ; the forehead is rapidly retreating ; the sinciput is contracted, low, and straight, and the occiput is very prominent and projecting backwards.

It is evident that through the foramen magnum, or aperture at the base of the head resulting from the decapitation, the brain, the tongue, and most of the bones of the cranium and face were re-

moved, from the fact that this opening has been enlarged by vertical incisions, which have been closed by sutures of cotton thread. The scalp is clothed with a profusion of straight, stiff, and rufous black hair, which falls in tresses the length of nearly two feet from the vertex posteriorly, while anteriorly the locks are cropped after the usual Indian custom. The hair is firmly attached to the scalp, and is not at all friable. Examination under the microscope by Dr. Shady, showed that the individual hairs differed in no important respect from those of the Anglo-Saxon race: some were oval in shape, others cylindrical, and a few inclined to be triangular. The rufous hue is probably owing to the exposure to the sunlight and the weather, for this is more decided on the vertex and among the outer tresses than observed among the inner locks when brought to view. On the right temple, about three-quarters of an inch above the top of the ear, and just within the limits of the hair, exists an irregular opening through the scalp, the edges of which are especially ragged, spongy, and friable. This is the fact in regard to both specimens, the only difference being in their locality, as one is just anterior to the margin of the hair in the right temple. I am disposed to think that these were produced at the time of death, and are the results of a wound inflicted by a blunt instrument, as the conditions of the tissues in their vicinity are indicative of the infiltration and softening of the parts, which rendered them less able to resist the tendency to decomposition. At the vertex of the scalp are two small perforations, through which pass a loop, and this is undoubtedly intended to suspend the head about the neck of a person, as the hair around these perforations is worn away apparently by friction. The several parts of the external ear present their natural configurations and relations so perfectly, that it is difficult to imagine any contraction having occurred at all; they do not exhibit any of the shriveled or pinched appearance always seen in desiccated fibro-cartilage. On close examination can be seen the hole through the lobe for the ear-ring, and in the case of one there is a broken fringed loop still attached, and passing through the perforation of the lobe. In the delineation of the facial features I think no one will deny that there is little to be found which would attract the limner in search of the lines of beauty, yet do we see the outlines and expression of the human face remarkably well preserved. On the right side of the forehead, near the irregular opening in the right temple already described, there is in one specimen a depression with an incision closed by sutures; a similar incision and depression occur in the other specimen, but through the left temple, and closed by sutures. These seem to have been made for the purpose of removing the inner parts implicated in the neighboring battle-wounds, so as not to disturb them, that they should remain in the same condition as they had occurred. There are likewise incisions closed by sutures existing at the base of the nose between the orbits—in one case extending from one orbit to the other. These were also made,

evidently, to remove the bone, and inner parts in these vicinities. The eyebrows are distinct, and especially abundant at the nasal extremities; the ciliæ are firmly attached, and of a brown hue. The eyelids are preserved, but closed and inverted; the ciliary borders are fringed with eyelashes. The nose is prominent, expanded, and unshriveled; in both nostrils are abundant ciliæ, which are firmly attached and very stiff. The cheeks are unwrinkled, and present the natural outlines at the malar and zygomatic regions, thus giving a characteristic Indian expression to the face. The lips are somewhat imperfect in both specimens, only slightly so in one, however, and have been repaired by a resinous substance. They present a compressed, puckered, and pouting appearance, as if drawn together by interrupted sutures; there are three perforations through both lips, which contain loops, and to these are suspended a short horizontal braid, which is composed of nooses in regular order, made by attaching the long pendent cords at their middle—so that there is a horizontal base-cord suspended by the loops through the lips, and this base-cord supports a long pendent tassel of cotton cords, about twenty inches in length. I have been thus explicit in the description of this tassel pendent from the lips, because in some respects it resembles the Peruvian “Quippu,” which was the chronicler of events during the Inca sovereignty. At the lower portions of the cheeks and beneath the chins of both specimens, the integument presents a faint reddish tint, which seems to be produced by a pigment of an earthy character, like that used by the South American Indians to paint their faces in time of war, and to decorate their pottery. An accidental fracture which has occurred recently in the case of one of these specimens, and which embraces quite two-thirds of the vertical circumference of the head, gives the opportunity to examine the tissues of the integuments unchanged by long exposure. The exhalant and absorbent vessels extending from the epidermis to the cutis vera, the follicles and hair processes, which also pass through to the skin, all are distinctly seen not infiltrated with any foreign substance, but in a normal and simply desiccated state. The inner surface of the vertical region of the scalp of one specimen presents a black and glistening aspect, as if resulting from the application of a degree of heat sufficient to roast the parts, *which has evidently occurred at a comparatively recent date, and is not at all apparent in the other specimen.* The diameters and circumferences of these heads, when compared with those made by Dr. Morton of the smallest cranium of an ancient Peruvian, as published in his *Crania Americana*, are about one-third as great. Thus we see in the delineation of these two specimens of mummification that their conditions and features in conjunction are sufficiently pronounced and perfect to enable one to arrive at the conclusion that they are the integumentary and muscular portions of adult human heads reduced to their present diminutive size. Besides, the general configuration of these idol heads resembles in an eminent degree

that of the crania of ancient Peruvians, according to Dr. Morton, who thus states, "They are small, greatly elongated, narrow their whole length, and with a retreating forehead. The hair is uniformly long, lank, and appears to have been worn at full length by both sexes; its natural blackness is preserved, notwithstanding centuries of inhumation. I have seen," he says, "some skulls of this race, which must have been naturally very long and low, yet in order to exaggerate a feature that was considered beautiful, compression has been applied until the whole head has assumed more the character of the monkey than the man." These horizontally elongated heads found in the Peruvian cemetery of Arica, have a conformation prevalent among the old Aymara tribes which inhabited the shores and islands of Lake Titicaca, and whose civilization seems evidently to antedate that of the Inca Peruvians.

## PART II.

The question now arises—That if these mummifications are adult human heads reduced to pigmy size, what was the process adopted by which this was accomplished? We know from the writings of Herodotus and Diodorus Siculus that the processes of embalming practised by the Egyptians were elaborate and complicated; also that all the mummies ever found or alluded to were of the entire person, excepting the internal organs, and the external soft parts were invariably impregnated with foreign substances as preservatives. It is thought, however, that the real method of embalming is not easily comprehended by us moderns, for some doubt the possibility of removing the brain through the nostrils, and others have supposed that the intestines were not removed at all. But it is a general conclusion that there were two principal processes adopted by the Egyptians, by which in one case the whole members, features, and expression were preserved entire, and in the other and more general operation, the flesh was consumed, and nothing except the skin and bone were retained. Examples of the former are not now extant, but there are two kinds of mummies still obtained in Egypt. Those in a dry, indurated state, completely impregnated with resinous matter, which, from its hardness, may be broken in pieces; and those which, with their envelopes, are soft and yielding upon external pressure, and prepared with very little resinous matter, and with nothing but vegetable mould in the cavities. Although the flesh unquestionably was in certain cases preserved, it seems probable that the body was more usually reduced to a skeleton and boiled in the resinous and anti-septic mixture which was invariably used. The Garunches of the Canary Islands practised embalming quite extensively. Their history is involved in great obscurity, and their existence is best proved by the remains of the dead, for their posterity has been for many years almost, if not entirely, extinct. "Their mode is supposed to be, for it is not explicitly known, as follows: Apparently the brain and intestines were removed entirely, then the body

was washed in an infusion of pine-bark; next, it was anointed with butter, or warm grease, impregnated by boiling with such odoriferous herbs as grew in the country, and afterwards the body was exposed to the sun. When the body became well dried the same operation of anointing was repeated. These alternate operations of anointing and drying in the sun were practised until the body was thoroughly impregnated with the aromatic ointment, and was reduced to a very light weight. Then the body was wrapped in an envelope of three layers, which were composed of bandages of tanned buck or goat-skin, three inches broad. The bodies thus embalmed have been found in the caves in the mountains, occupying niches in the rocks. One that was recently examined presented the features of the face quite perceptibly, the skin of the whole body well preserved, dry, but pliant, and of a deep brown color. *The hair was very long and black, but easily detached from the scalp.* Thirty-two teeth were found in the jaws, and so firmly fixed as to require a dental instrument to remove them. The back and belly were covered with hair; the skull was empty, but the cavities of the thorax and abdomen were full of a grain resembling rice." "At Nukahiwa, one of the Marquesas Islands, it is said that embalming is practised at the present day. The process is as follows:—The body is washed and laid on a platform, and then constantly rubbed for nine months with cocoa-nut oil to repel the putrefaction. From this continued application of the oil and accompanying friction the body becomes hard as stone, and quite incorruptible. At the expiration of a year the friends of the deceased partake of a feast, during which they thank their gods that he has been permitted to arrive at the other world. After the feast the body is broken up into small pieces and packed in a box, and carried to the burying-ground, which is styled 'Morai.'" Capt. Cook, in his Voyages, states that the Otaheitans preserve the bodies of their chiefs a long time for public exposure. They accomplish this by taking out of the abdomen the intestines, and then stuff the cavity with cloth. After this they lubricate the body freely with cocoa-nut oil. At Palermo the bodies of those of high rank have been preserved in catacombs near the city for centuries by the simple process of desiccation. The body is dried in a stove heated by a composition of lime. The flesh of these mummies is dried hard, and shrunken on the bones, but the contraction and distortion of the features exhibit hideous pictures of mortality. The old Spanish writers state that the ancient Peruvians preserved the bodies of their dead by a simple process, very unlike the elaborate embalming of the Egyptians. According to these writers, the Peruvian method consisted in exposing the body to the action of the cold, exceedingly dry, and highly rarified atmosphere of the mountains. Such, indeed, seems to be the opinion of Garcilasso de la Vega, though some writers speak of resinous and other substances having been used for embalming the body, as, for instance, Acosta declares, "that one of the sovereigns of Peru was so well preserved

by a kind of rosin, that his body seemed alive." The appearance, however, of one of the royal mummies found at Cuzco, as reported both by Ondegardo and Garcilasso de la Vega, makes it probable that no foreign substance was employed for their preservation. Prescott, in speaking of the embalmed bodies of the Incas in the Great Temple of the Sun at Cuzco, says, that "they sat with their heads inclined downwards, their hands placidly crossed over their bosoms, and their countenances exhibiting their natural dusky hue, which was less liable to change than the florid complexion of the European. Their hair was raven black, or silvered over with age, according to the period of life at which they died. It seemed like a company of solemn worshippers fixed in devotion, so true were the forms and lineaments of life. The Peruvians cherished and venerated these relics of their Incas, and as they were carried through the streets, decently shrouded with a mantle, the Indians threw themselves on their knees in sign of reverence, with many tears and groans. Also on certain festivals the revered bodies of their sovereigns were brought out with great ceremony into the public square of the Capitol. Invitations were sent by the captains of the guard of the respective Incas to the different nobles and officers of the Court, and entertainments were provided in the names of their masters, which displayed all the profuse magnificence of their treasures. The banquet was served by menials of the respective households, and the guests partook of the melancholy cheer in the presence of the royal phantom, with the same attention to the forms of courtly etiquette, as if the living monarch had presided." The Peruvians secreted these mummies of their sovereigns after the conquest, that they might not be profaned by the insults of the Spaniards. Garcilasso de la Vega saw, in 1560, the five mummies discovered by Ondegardo in Cuzco, and thus speaks of them: "They were dressed in their regal robes, with no insignia but the 'Llautu' on their heads. They were in a sitting posture, and perfect as life, without so much as a hair or an eye-brow wanting." Now, in all of these accounts of the different processes of embalming, and of the conditions and appearances presented by the various mummies of both hemispheres, do we find anything analogous to these diminutive Macas heads? None of the processes described suggest the idea of great shrinkage, except that of simple desiccation. In the case of the mummies at Palermo the soft parts are greatly shrunken, but they are equally distorted. How much of this distortion is owing to the presence of the unyielding osseous frame, and the application of artificial heat, which produced rapid desiccation, and how much more the shrinkage might have been if the bones were entirely removed, I am not prepared to say; still, it is my opinion that these circumstances were the causes of the distortion to a great extent, and that the shrinkage would be greatly increased by the removal of the bony attachments. Now, if the Peruvian method of *slow* desiccation is duly considered with the perfect results alluded to, we may

reasonably presume, that if the bones of the body should be removed, a regular and uniform shrinkage might occur without much distortion; still, there is a limit to this, and beyond this limit of shrinkage, if urged by any process, I am disposed to think distortion would occur. Therefore, I conclude, that if the very slow process of desiccation be adopted by the exposure to the well known atmospheric conditions existing on the altitudes of Peru and Ecuador (one of the influences of which is to repel *naturally* the putrefactive tendency in dead animal tissues), contraction of the soft parts would be produced regularly and smoothly, if not interfered with from unyielding osseous attachments, and as this is limited, consequently I am forced to think that the Macas heads originally were exceedingly small, and have been preserved and reduced to their present size by the *simple process of slow desiccation, there being no evidence of impregnation of the tissues with resinous or any other foreign substance.* In reference to the fact that their configuration has been maintained so perfectly, I think this can be explained in this way: the manipulator has, by the simple process of stuffing the cavities after the removal of the bones with some pliable and elastic material, prevented the soft walls of the head and face from collapsing—a result not difficult, if we admit that the tendency to distortion is comparatively slight under the process of *very slow desiccation.* And after the tissues have become somewhat stiffened by the desiccatory process, then by persistent manipulation the outlines have been fashioned after the prevailing taste, which was, as we are told, to exaggerate the natural peculiarities obtaining to the cranial developments of the race. The next question for consideration is—Why were *the heads only* thus preserved, and to whom did they belong? We will recollect that in the accounts given of mummies there is no allusion made to the preservation of the heads either alone or separate from the body. There is an approximation to the idea in the custom and to be practised by the Indians at Fort Mulgrave on the North West Coast, and some other neighboring tribes. They decapitate their dead chiefs, and place the heads in a box by themselves. This singular custom also prevails in some of the South Sea Isles, as the Ladrone, and Society, and Gambier groups. But none of these Indians appear to practise the art of preserving the bodies or heads of their dead as mummies. It therefore appears to me that these Macas heads are the mummified trophies of war; that they are the heads of warriors slain in battle, and were preserved by the victorious combatant, as the North American Indian does the scalp of his fallen enemy. There are several reasons for this conclusion, which I will enumerate. First, the unnatural and unprecedented character of the custom, which would decapitate and mutilate the body of a cherished friend, or highly respected person, for the sole purpose of preserving a portion of it to be worn about the person. Second, the fact of the existence of the perforations through the vertex of the scalp from which the heads were suspended, and evi-

dently made for the purpose of facilitating the habit of wearing these heads attached to a loop around the neck of the victor, as demonstrated by the hair being worn away by friction around the edges of these perforations. Third, the irregular openings through the cranial walls, which are located in the right temples of both heads, are most probably battle wounds, for they differ in character from the other linear openings through the facial walls which have been made apparently for the purpose of extracting the inner parts, and afterwards closed by sutures. Likewise the conditions of the edges, and the tissues in the vicinity of these irregular openings, are indicative of such a supposition, as previously explained. Lastly, the color of the hair having been changed to the rufous hue, which is known to occur rather from the exposure to the weather than from the longest period of inhumation.

In reference to the resemblance of the curious appendages from the mummied heads to the Quippus of the Ancient Peruvians, as described by numerous authors, it seems to me that they are imperfect attempts to imitate the originals. The Quippus are said to have been composed of twisted wood, and consisted of large cords, which were the bases of the documents ; to these base-cords were fastened threads, more or less fine, which were attached in a peculiar manner, and were knotted or intertwined in an established order, to express ideas, events, or numbers. The size of the Quippus varies ; sometimes the base-cord is five or six yards long, at others it is not more than a foot ; the pendent strings or branches rarely exceed a yard in length, but are generally shorter. The different colors of the threads have different meanings also ; thus, red signifies war or a soldier ; yellow, gold ; white, peace ; green, wheat or maize, etc. In the arithmetical system a single knot means 10 ; a knot doubly intertwined, 100 ; triply, 1000. Not only are the color and knots to be considered, but even the mode of twisting the threads, and particularly the distance of the knots from the base-cord, are important to a proper understanding of the Quippu. In every city of any note there was an officer styled Quippu-Camayoc, whose business it was at all times to knot and decipher these documents, and in course of time this became so perfect a science that those skilled in it attained to the art of expressing by knots historical events, laws, and decrees. But notwithstanding their skill, whenever a Quippu came from a distant province it was necessary that it should be accompanied by a verbal commentary sufficient to indicate at least the subject matter of which it treated, and the Quippus which related to the same subject were always preserved together in certain repositories, that there might be no risk of error by mixing or changing them. Repeated attempts made in modern times to read, the Quippus have proved failures, because of the difficulty of deciphering them without a verbal commentary to explain the subject matter of these documents. And this especially applies to those found in the "Huacas." Besides, the art or science of the Quippu language

appears to have been lost to a great extent by the modern Peruvian, although it is thought that there are still in the Southern Provinces of Peru, Indians who know how to decipher these intricate memorials, but they guard their knowledge as a sacred secret inherited from their ancestors. Now, in conclusion, I am disposed to think that the configuration of the lips, and the perforations through them, which no doubt date from the earliest history of the mummification, are indicative of having been produced by the attachment of a Quippu, which perhaps chronicled the history of the trophy; and that the degenerate descendant of later times, has in order to perpetuate the original tradition expressed by the lost Quippu, attempted to supply its place in the imperfect mode which his diminished intelligence dictated.—*American Medical Times.*

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*Letters from Prof. Charles A. Lee.*

VENICE, Oct. 12, 1862.

## VENICE, ITS PECULIARITIES, HOSPITALS, ETC.

"In Venice, Tasso's echoes are no more,  
And silent rows the songless gondolier ;  
Her palaces are crumbling to the shore,  
And music meets not always now the ear ;  
Those days are gone ; but Beauty still is here.  
States fall ; arts fade ; but Nature does not die."

Venice is a glorious place for cripples, for as all locomotion is by gondolas, there is no particular use for legs. Palmer and Bly would be at a discount here, and their polished specimens of artificial limbs, "better than the natural," would only serve as curiosities for the museums. How strange to find oneself in a city built on a hundred islands, where the only streets are canals, the only vehicles gondolas, where a horse was never seen except the brazen horse of St. Mark's, no wheeled carriage ever known, no rumbling of wheels ever heard ; where the houses all stand in the water, and entering one seems like going on board a vessel, only there is no sea-sickness. "See Venice and die," seems to be the sentiment that animates all English, if not other travelers, and I must confess that it is a delightful place for those fond of novelty and not afraid of fevers, especially for a short period at the right time of the year. But I shall not apply for the consulship here, as I doubt whether I could ever feel exactly at home. I do not like to stop long in a place where every hour is a contradiction to my whole past existence ; where I could never see a hill, or a mountain, or a wood, or an ear of corn growing, or green fields ; or can hear a bird sing except in cages, or see an animal except in a menagerie ; where there is no spring-water but what is imported, and no rain-water but an infusion of pigeon dung, and no artesian wells but are charged with

sulphuretted hydrogen and iron; where the one hundred and forty-six canals send forth a horrid stench during the autumnal months; two, at least, of the plagues of Egypt are endemic and perennial; to say nothing of the hungry swarms of mosquitoes, which complement the Italian sanguinary practice in a manner not soon forgotten. But then to counterbalance all this, Venice is undoubtedly the most picturesque city in Europe, and full of character and variety. But as the pleasure of sight-seeing depends chiefly on association, it is necessary to be well posted in Venetian history, to "read sermons" in the stones of its palaces and public buildings; and the traveler must believe also implicitly in every word of the "Merchant of Venice," so that when he stands on the Rialto he has a full conviction that he occupies the very spot where Antonio rated Shylock about his "monies and his usances," and where he "spat on his Jewish gabardine," and where Othello addressed the assembled senate. It requires no great stretch of faith to believe in the "Thousand and one Tales" after visiting St. Mark's on an evening; seeing its magnificent square in all its marble beauty; the domes and minarets of its old church; the barbaric gloom of the Doge's palace; its proud, towering campanile; its famous Corinthian houses; the bronzed lion of the Pireus, and the old "Bridge of Sighs;" walking in the illumination of its long line of cafés, observing the variety of costume, the thin veil covering the pale Venetian beauty; the Turks with their beards and caftans, and long pipes and chess-playing; the Greeks with their skullcaps and richly laced jackets; Jews, Armenians, Persians, Moors, Sclavonians, Russians, all in their native garb, to say nothing of French, German, English and American tourists; the whole presenting a combination of novelty and variety scarcely ever met with in any other city of the world.

There are great attractions here also for the epicure; beef of the finest quality furnished by the horned cattle of Styria; exquisite veal from Chioggia; the fattest of poultry from La Polisine di Rovigo; excellent game from the Maremma. (Snipes in winter at five sous each, and other things in proportion.) The Queen of the Adriatic is rich, too, in her piscatory treasures, her splendid large fat oysters, her magnificent roach and turbot, ortolans, sole, gudgeon, ling, tunny, pidocchi, mullet, roes in the form of caviar (*bottarga*), sardines, mackerel, lobster, etc., etc. There is also abundance of fine fruit here from the hills of Este, Monsilice, and Martagna, wines of the best growth of French and Spanish vineyards, and, as it is a free port, most other commodities at a cheap rate.

But the characteristic features of Venice are too well known to need further description; let us see what it has that deserves the particular notice of the medical man. And first its *hospitals*. In these I have been greatly disappointed, as they are vastly larger and better managed than I had supposed. The large Civil Hospital at Venice stands on the banks of one of the principal canals, near the church of San Giovanni e Paolo; it dates as far back as

1485, and consists of the magnificent buildings of the Scuola di San Marco, a religious order devoted to the care of the sick and poor of the city. The buildings are somewhat irregular, but very spacious, and were devoted to their present purposes after the fall of the republic. The whole establishment is capable of accommodating from 1500 to 2000 patients. The entrance is through a wide and high hall, with splendid marble floors and columns, beautifully carved wood ceilings and frescoes; and the wards, which are between one and two hundred feet long, with very high ceilings, are grouped around six large court-yards, in one of which is the sarcophagus of Marino Faliero, the decapitated Doge. There are sixty two halls or wards admitting of extensive classification. There are, for example, lying-in wards, syphilitic wards, fever wards, wards for diseases of children, for female lunatics, for ophthalmic cases, for medical and surgical diseases. One of the principal physicians conducted me over every part of the establishment, and explained everything minutely. In some of the wards there were four rows of patients, owing to repairs going on in the building. Still, I doubt not there were over 1200 cubic feet of space to every bed, owing to the great height of the ceilings. Every part was scrupulously neat and clean, and the utmost order and system everywhere prevailed. There are 1000 patients in the buildings, under the charge of 11 principal surgeons and physicians, 14 assistant surgeons, 16 sisters of charity, 8 apothecaries, 1 director or acting principal, and 1 director-general. There are two classes of patients, pauper and pay. Of the latter are three grades: 1, those supported by the district or commune to which they belong, who pay 55 cents per day; 2, a class of private patients who pay 40 cents per day; and 3, a superior class, who have better accommodations, and who pay 88 cents. In the court-yards are nine cisterns for rain-water, and one artesian well. This is forty-five metres deep, and the water has a taste of sulphuretted hydrogen. Children under seven occupy the basement, which struck me as very damp and unhealthy. The little patients all had a miserable, pale, sad and sickly look. The apothecary apartment, as in all Italian hospitals, was on a large and splendid scale, and admirably managed. The buildings are of two stories, and the whole thrown into large wards, one of which was devoted to cases of *pellagra*. All were extremely clean, quiet, and well ventilated.

The *male lunatic asylum of Venice (San Servolo)* is situated on an island in the lagune between Malamono and Lido. It is near the Armenian convent of San Lazare, where Lord Byron often resided, and is under the charge of monks of the order of St. John of God. Some of them have received a regular medical education at the University of Padua, as has also the superintendent, who is a very intelligent and capable man. The arrangement of buildings is similar to that of the civil hospital in the city. They are arranged around central courts, opening front along corridors, and the establishment covers the whole island. There are cells for the more violent and dangerous patients, containing two beds each,

while the epileptics or convalescents sleep in wards containing a large number of beds. The bedsteads are of iron, fastened to the floors, which, as well as those of the corridors, like those of nearly all Italian hospitals, are of polished concrete, hard and beautiful as variegated marble. The wards are high, wide, and well ventilated, and in winter are warmed by stoves. This institution does great honor to the city of Venice. It embodies most of the recent improvements in classification, and moral and physical treatment. No corporal restraints are used, unless padded rooms are so called, and it is very seldom that they are brought into use. In cases of active excitement, patients are generally confined to their cells. There are various workshops connected with the establishment, in which different trades and pursuits are carried on by the patients, as tailoring, shoemaking, carpentering, smith-work, etc. The kitchen work is also chiefly done by patients, under the direction of the chief cook. There are spacious exercising grounds adjoining, and elevated alcoves from which there are beautiful views of Venice, etc. In all respects this institution will well compare with the better class of English and French asylums.

The annual reports, which appear to be very accurately kept, show that the total number of patients for the ten years from 1849 to 1861 inclusive, was 3617, and the deaths 1178, giving a rate of mortality of 32·5 per cent. The mean number of patients during the last five years has been 343, and the mean number of deaths 75 per annum, being an annual mortality of 21·8 per cent. During the last five years the total number treated was 1314, the deaths 377, and the rate of mortality 28·7. Of this number, however, 411 were cases of pellagra, and the deaths in this form of insanity were 133, leaving a mortality of 27·02 per cent. for ordinary cases. There are accommodations for 360 patients in the whole establishment; the total number in 1861 was 567. Pellagra is a common disease in Italy, and it is very apt to be accompanied or followed by that form of insanity called melancholia. The officers are very civil and hospitable to strangers, and take great pleasure in answering all questions and showing all the arrangements. Intelligent zeal, humanity, kindness, and skill, are conspicuous in every department of the establishment. In both the hospitals above mentioned, a charge is made for the maintenance of the patient on the town or district in which he resides, if it can be ascertained; if not, the expense is charged to the municipality of the city. In both the only requisite for admission is, that the patient stands in need of medical assistance.

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ROME, Nov. 28, 1862.

The great hospital of *Santissima Salvatore*, which I visited next, consists of two piles of magnificent buildings, situated on opposite sides of the street leading from the Coliseum to St. John

Lateran. It was founded by Cardinal Colonna in 1216, and went under the name of St. Andrew until committed to the present confraternity, from which it derives its present appellation. This religious order, composed at first of twelve noble Romans, had charge of the chapel called *Sancta Sanctorum*, near the Lateran palace. The physicians in charge at the time were extremely civil to me, as they have been everywhere, and gave me every facility for seeing and investigating everything connected with the establishment. The hospital is chiefly for females requiring medical treatment, receiving patients of any religion, age, rank, or country. It has, also, a department for those suffering from sudden violent accidents, and a ward for aged females afflicted with chronic disease. It has about 600 beds, and its register shows a greater mortality than any other hospital in Rome, being upwards of 14 per cent. This high death-rate is doubtless owing partly to the insalubrious situation in which it is placed, and partly to its admitting so many aged persons afflicted with chronic and incurable complaints. The principal ward is an immense hall of large proportions, perhaps 300 feet long, and of proportional width and height; the windows, placed high above the floor on each side and frequently opened, allow of the most perfect ventilation. Its ordinary staff consists of two principal physicians and one principal surgeon, with two assistant-physicians and two assistant-surgeons, besides its attendants and dressers, twenty in number. Regular visits are made twice in the day, but physicians are always about the establishment, ready to give their services when wanted. A religious order, called *Cruciferi*, distinguished by a red cross on the habit, attends to the spiritual wants of the patients. In 1821 a community of *Sisters of Mercy*, who had dedicated themselves to visiting the sick in another part of the city, were transferred to this hospital by Pope Pius VII. The same order had important privileges granted to it by Popes Leo XII. and Gregory XVI. The vows of poverty, chastity, obedience, and hospitality, last only for a year, and are renewed at the end of that time; but when its members attain the age of forty they can make the vows perpetual. A large majority of the patients at the time of my visit were laboring under some of the forms of fever, malarious chiefly, but many were cases of typhus and typhoid. The treatment does not vary essentially from that pursued in similar cases in our own country, except that depletion, especially by leeches, is far more frequently practiced. A large fountain in the central court serves, not only for the preservation, but also the breeding and multiplication of the leeches.

What strikes an American as somewhat strange is to see so many religious women moving about from bed to bed, bringing food or drink to the patients, and soothing and comforting them by constant attentions, kind words, and spiritual ministrations. It is not uncommon to find patients in this hospital of very great age, several between eighty and ninety, and some between ninety

and one hundred, and not unfrequently centenarians. Two wards in this hospital are devoted to cases of tuberculosis or pulmonary phthisis, the average age of the patients being apparently between twenty and thirty. As this disease is universally regarded here as *contagious*, they are never mixed up with persons laboring under other diseases, but have separate rooms or buildings assigned them. Most of these cases are brought to the hospital late in the progress of the disease, many in the last stages, often probably for no other reason than that they may have the certainty of enjoying the consolations of religion in their dying moments.

One great recommendation of this noble institution is, that admission is freely granted to all who apply; no restriction, no red-tape, no certificate from a director or recommendation from a subscriber is necessary, as with us. The doors fly open to all who wish to enter; no preliminary examination even is required. Here is the patient, there a bed waiting for him; no hope delayed to make the heart sicker which was sick before. The religious, including nuns and priests, reside within the building, each having their own convent. The expense of supporting a patient here is about twenty-five cents per day. Once a year, on a particular Sunday, a grand procession of the Blessed Sacrament issues from the adjoining Church of St. John Lateran, and crossing the square, passes through the wards of the hospital, the Sacrament being borne by the Cardinal Arch-Priest of the Basilica, the Pope and all the cardinals assisting. The object of this procession seems to be to have a salutary effect on the sick and dying, and cheer them in their afflicted condition.

Besides the public hospitals at Rome already mentioned, there are several small institutions of a more private nature belonging to different nations and corporations; the Germans, Spaniards, Portuguese, Lombards, Florentines, and Lucchese, have each their separate hospitals. When the late Chevalier Bunsen resided in Rome as Prussian ambassador, he founded a hospital on the Monte Caprino, near the Capitol, for poor Protestants. This is supported by private subscriptions, and such of the patients as are able to pay a small sum for their support and medical attendance. The hospital is under the protection of the Prussian Legation, near to which it is situated. The sick ward forms a floor in a large building overlooking the Forum and the Palatine. Murray speaks of it as well deserving the support of Englishmen who visit Rome, "as the only one where poor British Protestants can be received without being subjected to the persecutions of friars and attendants in the other hospitals, to bring about their conversion to Romanism."

From a careful examination of the subject I am satisfied that there are few, if any, capitals in Europe where the hospitals are more numerous in proportion to the population, constructed on a grander scale, or endowed with more princely liberality, than in Rome. The annual endowment of these establishments is no less

than 260,000 dollars, derived from lands, from grants, and from the papal treasury. Formerly administered by separate confraternities, the hospitals were placed by the French government under one general board, as in Paris, from which the best results were obtained; but of late years the ancient system has, in some degree, been restored, each establishment being placed under a separate direction, with a prelate at its head. Such a system is liable to abuses, especially jobbing, as we know from our own hospital experience, but it is difficult to hit upon any plan of management which is not open to some objections. Formerly they were ill administered and badly managed in their domestic arrangements. Considerable improvements have been introduced of late years, but especially since 1849, from diminishing the interference of the clergy and friars, and limiting it to its purely spiritual duties. The late accomplished Princess Doria made great efforts to introduce the French Sisters of Charity into this city, and succeeded to some extent, although opposed by many of the ecclesiastics connected with these institutions. It would not be just, perhaps, to place the Roman hospitals before those of Florence or Milan, but it is difficult to say wherein they are inferior. It is certainly a somewhat remarkable circumstance that, with such a wide field for anatomical and pathological investigation, the medical school of Rome is behind all the others in Italy, and has not produced a really great man, or even a medical work of superior merit, during the present century; nor is it less surprising that in this great city, the real capital of Italy, there is not a single medical periodical published, nor is there a medical society or scientific association of any description in this enlightened city of nearly 200,000 inhabitants. I have inquired of native Romans the reason of this, and have been answered that no secular societies or organizations are permitted here, on account of the danger of their being converted into political associations and used for revolutionary purposes. Whether this be the true reason or not I do not pretend to decide; but those who have resided here for some time as medical practitioners from other countries assure me that it is the true reason. Great credit is, however, due to the present Pope, for the deep interest he has always manifested in the hospitals, prisons, reformatories, almshouses, lunatic asylums, and educational institutions, in Rome. He has made additions to many of the hospitals from his own private resources; some he has entirely rebuilt. He has introduced many important reforms, has suggested and had carried out several new and improved arrangements, and has watched over them all with paternal care and solicitude. He has personally visited and inspected every hospital in Rome, and that, too, at times when his visits were wholly unexpected, so as to learn from his own observation their actual condition. During the prevalence of cholera he fearlessly went among it, visited the cholera hospitals, cheered the patients, encouraged the physicians and nurses, and did much to

allay the panic and dread of the disease universally prevalent, and dispel the idea of its contagiousness. If Rome is far behind other cities in many things, as she undoubtedly is, some allowance should undoubtedly be made for the present pontiff, who, with the best intentions and the most benevolent dispositions, is hampered by what he and his counsellors consider the political exigencies of the times.

The *Lying-in Hospital* of Rome, *San Rocco*, is connected with the Foundling Hospital, and consists of one great hall and several chambers, one of which is appropriated to births. It was originally established in 1500, with fifty beds, partly for medical and partly for surgical cases; it was, however, changed from its original destination and converted to its present purpose by Clement XIV. in 1790. It has at present from thirty to forty beds, each bed having a curtain and screen, so that the occupants are not seen by the others. All who apply are received without any questions being asked; some with their faces covered with vails which they are not required to remove. On the register they are only known as guests at a hotel, by their number. No one is allowed, unless by special permit, to enter the hospital, except the physicians, nurses, and attendants. Many are received at a considerable period before their confinement, so that their condition may not be suspected by their friends. If able to pay a small sum they have superior accommodations; and when they are well enough to leave the institution they pass out by a passage in the rear, through an unfrequented street, and thus escape all danger of detection. If they wish to reclaim their children at some future time, some distinguishing mark is put upon them. But the children generally are sent to *San. Spirito*. Usually patients are received only a few days previous to delivery, and they remain on an average about one week after confinement. It is supported partly by its own revenues and partly by the State, like the other public institutions of Rome. Whatever objections may be raised by some against the secret policy pursued in this institution, I am satisfied both of its expediency and wisdom, as it leaves open a path to moral and social redemption which a different policy would close for ever. It is a course dictated alike by wisdom and humanity, and no one can justly charge its managers or the State with encouraging vice or immorality, for they act on the well known and admitted principle that the great object of human laws, as well as human institutions, is the reformation rather than the punishment of the offender. A woman may recover character and self-respect if she has a fair chance to make the experiment; but what chance has she who is once known and publicly branded as unchaste and the mother of illegitimate offspring, to say nothing of the wretchedness entailed on the child, or the temptations to infanticide?—*Amer. Med. Times.*

*Report of Sixty Cases of Hospital Gangrene, treated by ALFRED NORTH, Acting Assistant Surgeon at U. S. A. General Hospital, Frederick, Md.*

Hospital Gangrene is a species of moist Gangrene or Phagedena, which is characterized by the rapidity of its progress and by its infectious nature; in a mild form it occasionally makes its appearance in civil hospitals, but it is in overcrowded and in ill-ventilated apartments that it is more commonly met with, and it is here that its true character can be most correctly and thoroughly studied. This disease made its appearance in this hospital about the middle of October. For the preceding three weeks the beds, floors, and even the greater part of the grounds had been occupied by the severely wounded from the battle-fields of South Mountain and Antietam (September 14th and 17th, 1862). The two barracks in which the disease first made its appearance were erected for the temporary occupation of the Provost City Guard, and from necessity used for hospital purposes, in order to accommodate the great number which was daily arriving. The floors were so slightly elevated from the ground as not to allow of the free circulation of air beneath them, and the windows so arranged that they could not be opened without blowing directly upon the beds, and even when this mode of ventilation was attempted the windows were frequently closed by the patients, especially at night, when fresh air was most needed. The utmost attention was paid to cleanliness before and after the outbreak of the disease. Every man was furnished with a new sponge, which was frequently and thoroughly washed and kept in view at the head of his bed; the soiled dressings, as soon as removed, were taken from the ward; regular inspections were made by the medical officer of the day, and by a reliable night watchman. Sixty-five patients were allowed to each barrack, which gave six hundred and twenty cubic feet of air to each patient. The commencement and progress of hospital gangrene, for a time, were very insidious; the open wounds, instead of cicatrizing rapidly as they had previously done, began to assume a sloughy and unhealthy appearance; this was especially noticed in patients occupying corners of the wards. Erysipelas and pyæmia also prevailed to a considerable extent, and minor operations were frequently followed by disastrous results. Thus, a disease which at first was but a simple sloughing ulcer, became one, the very name of which was, and continues to be, a word of terror to every wounded man in the hospital.

As soon as hospital gangrene was clearly recognized as such, the patients affected were immediately transferred to a tent fitted up for the purpose, and placed under my care; in this way sixty cases of the disease came under my observation during the last three months. It usually attacked ulcers that had nearly cicatrized. My attention was usually first called to them by the com-

mon, and I might almost say universal expression—"Doctor, I have a burning pain in my wouud, and it is growing much larger." Upon examination the edges of the ulcer were found thickened, indurated, undermined, and jagged in appearance, the surrounding areola of a dark purple color, and the surface of the ulcer covered with a grayish exudation ; if this was allowed to go on without treatment, or only simple dressings, for two or three days, extensive destruction of tissue, as of the calf of the leg or on the muscles of the buttock, would take place, leaving behind a disorganized pultaceous slough, exhaling a peculiar stench, which, when once recognized, could never be mistaken. The concentric development spoken of by most writers upon this subject, especially Guthrie and Black-adder has not been noticed here, except in very mild cases. The extension of the disease, for a time, seemed confined principally to the cellular tissue along the course of the muscles, the sheaths of which were finally stripped off, then the fibers of the muscles themselves were involved. The large nerves and arteries were the last to yield to the onward march of the disease ; but these in time would give way (see Case No. I.) if the progress of the disease was not limited by the application of nitric acid. In this way I have seen good dissections made of the posterior portion of the thigh and the calf of the leg. There are two characteristics always peculiar to this disease in which it differs from all other forms of gangrene, the one its peculiar odor or stench, and the other its depressing influence upon the mind ; the former was noticed in fifty-three cases, and was so marked that it could be recognized upon my hands during all the day after handling the diseased parts, although disinfectant liquids were freely used. The latter characteristic existed among our patients here to an alarming extent, and constituted a great embarrassment to successful treatment. In one ward, accommodating eleven patients, there were, during two months, ten upon whom this mental depression was so great that they gave up all hope of recovery, and, wishing to shorten their time of suffering here, tried in various ways to procure poison from the nurse. This mental disturbance was recognized by M. Delpech in his treatise upon this disease, but he ascribed it to the misfortunes and sufferings of the French army. Guthrie, in speaking of it, says, "there existed a morbid dejection, or apathy, which could scarcely be removed, and on which, in very bad cases, no impression could be made. In others the humane solicitations of the medical officers have failed against the influence of oppressive gloom amounting to despair ; expectation and hope seemed to be exiled from their minds by the dominion of painful despondency, which, prevailing in melancholy disorder, seemed uncontrolled or checked by the intrusive importunities of the present or the consciousness of a future existence."

The following case well illustrates the destructive nature of the disease as well as its influence upon the mind :

S. D. Mabry, private, 6th Ala., æt. 22, admitted October 22,

1862, with two flesh wounds on right side of chest, and a compound comminuted fracture of right leg at about its middle. He had been wounded at the battle of Antietam, Sept. 17, 1862. Both wounds continued to do well up to November 10th, when that of the side took on a sloughy action. For two days previously he had experienced a burning pain in which it prevented sleep at night. It was then observed that the surrounding areola was livid, and that the ulcer had assumed a circular form, with jagged, indurated, and everted edges, with its base covered with a gray tenacious slough. The ulcer was dressed with oakum, saturated with Labarraque's solution of soda, and tonics administered internally. Nov. 15.—By this time the patient's general health began to be affected; he complained of loss of appetite, pyrexia, and occasional chills; the ulcer had extended to a moderate degree superficially, with but little change in its character. He was removed to-day to gangrene tents, the undermined edges slit up in various places, and strong nitric acid applied to the ulcer and also to the surrounding healthy tissue; was ordered tartrate of iron and potass in xv. grain doses three times a day. Nov. 20.—Two applications of the acid had sufficed to arrest the disease, and the ulcer had cleaned off and was granulating healthily; general condition much improved, and patient was removed from the gangrene tent. Dec. 9.—Four days since (the wounds of the side cicatrizing rapidly) well marked symptoms of hospital gangrene presented themselves in the suppurating wound of the leg, which, in the attack previously noticed, had been progressing favorably. Patient was again removed to gangrene tent, and nitric acid applied to the gangrenous tissue, which presented the same characteristics mentioned before in its first appearance. The following is a note made of the case: Patient's general condition very poor; mind much dejected and filled with gloomy forebodings; pulse 140 and very weak; entire loss of appetite, etc. The disease is making rapid progress, having involved and destroyed almost entirely the soft parts upon the posterior and inner aspect of the lower third of the leg, exposing the bone for about four inches. It was observed that at the first the integument, cutaneous nerves, and sheaths of the muscles were destroyed; and now the muscles themselves and the largest arteries and nerves are becoming involved, and are being converted into a blackened, disorganized pulpy mass, exhaling a peculiar stench which can be recognized in every part of the tent. In the upper portion of the leg, and also about the ankle-joint, the disease has not invaded the muscles themselves, but merely dissected them out and involved their sheaths. The whole limb to the body was much swollen, œdematosus, and painful on pressure; severe burning pain was also complained of. To such an extent had the disease progressed that the question of amputation of the thigh was broached, several operations having been performed for the disease in other of the city hospitals without its recurrence in the stump. It was, however, decided to try the efficiency of the acid

application. Patient was accordingly etherized, and all of the sinuses resulting from the extension of the gangrene among the muscles freely laid open, and the pultaceous slough removed with scissors and spatula, after which strong nitric acid was mopped on and then worked in by a sharpened stick. The application of the acid was also made to the adjacent healthy parts, this having been of service in limiting the extension of the disease. On recovering from the effects of the anæsthetic, ordered fifteen drops Magendie's solution of sulphate of morphine; brandy and beef-tea, each half an ounce every half hour. Dec. 22.—Patient's general condition has much improved. Is now quite cheerful, pulse 125 and gaining in strength; appetite returning, surface pleasant, etc. Very little if any shock followed the application of the acid on the 19th. The slough has separated, revealing a healthy granulating surface. The lower part of tibialis anticus, the inner portion of the gastrocnemius and soleus muscles, have been destroyed by the gangrene, together with the middle third of the anterior tibial artery and nerve; acid re-applied to several points where the disease had not been entirely checked, followed by dressings of oakum saturated in hydrochloric acid, half an oz. tincture of opium, 3 oz., water one pint. Feb. 9, 1863.—From the last date patient's condition has steadily improved, and the ulcer remaining from the result of the gangrene had granulated, cicatrized, and progressed so favorably, that there was decided prospect of saving the limb, when the disease, a few days ago, started again, and made its way through the muscles on the posterior aspect of the lower portion of the leg, and following the tendons behind the inner malleolus bored its way through the sole of the foot ere it was recognized. As before, the track was laid freely open, and nitric acid applied with a successful result, arresting the disease. Feb. 20.—Improvement since last note has been continuous both generally and locally. The ulcer remaining involves the entire posterior aspect of leg and side of foot to the great toe, and is closing rapidly. The subsequent history of the case shows that about March 1st erysipelas set in, and amputation of the leg near the tuberosity of the tibia was performed, with fatal results. No union of the fragments had taken place, and the ankle-joint was found to have been involved.

CASE II.—Confederate, admitted September 21, 1862. He was slightly wounded in calf of right leg by a shell, and did well up to November 4th, when it commenced sloughing, with undermining, induration, and eversion of the surrounding skin. A burning pain in wound was also experienced; slight constitutional symptoms were present, with loss of appetite, irritative fever, etc.; no odor perceptible. Patient was etherized, wound laid freely open, and nitric acid thoroughly applied, followed by a yeast poultice. Ordered, tartrate of iron and potass, 2 drachms, water, 4 oz.; half an ounce to be taken three times a day. The ulcer after operation measured seven inches in length by four inches in breadth. Nov.

5.—Slough was removed this morning, some portion being cut off with scissors ; gangrene appeared to be almost entirely arrested, but to some sloughy points nitric acid was re-applied ; poultices and tonics continued. Nov. 8.—It was found that the disease was still progressing underneath the skin at various points. These sinews were laid freely open and nitric acid thoroughly applied ; irritative fever slight. Nov. 10.—Gangrene is apparently arrested, the ulcer remaining is of large size, extending from heel to popliteal space, and has invaded the integuments of the whole calf of the leg, the base being formed by the remains of the gastrocnemius muscle. The slough has separated, and the granulations abundant throughout the whole extent of the ulcer ; general condition improving. Dec. 3.—The wound, which had been granulating healthily up to within a few days since, has again been invaded by hospital gangrene, which has made rapid progress. Today it was found to have extensively undermined the skin, and had proceeded along the sheaths of the muscles of the leg. A large sinew upon the outer aspect of limb was freely laid open by an incision extending from the middle of the leg to the external malleolus, the sloughing tissue removed by scraping, and nitric acid applied by means of a pine stick. The insinuation of the disease among the muscles rendered the thorough application of the acid very difficult. The burning pain, the induration and eversion of the edges of the ulcer, with constitutional excitement, etc., are present. Takes tonics and stimulants, and locally as a wash, Acid. hydrochloric,  $\frac{1}{2}$  oz., tincture opium, 3 oz.. water, one pint. Dec. 23.—The application of acid mentioned at last date materially checked the progress of the disease, but at several points between the muscles repeated application became necessary. The disease starting at another point when checked in one place, resembles at times a serpiginous ulcer. Whenever the fibrous tissue became involved it was noticed that the disease became less amenable to treatment. The tendo-achillis has been almost entirely destroyed, only a small portion remaining, which was carefully preserved. The sloughing had involved also a large portion of the muscles of the calf of the leg, and had extended from a short distance below the knee to the ankle. The general condition has been kept up by good diet, etc. Jan. 15, 1863.—The ulcer remaining was about the size of a silver dollar and rapidly cicatrizing. Notwithstanding the loss of tissue patient is regaining, to a very great degree, the use of his foot.

The evidence of the infectious nature of hospital gangrene has been abundant. In one instance, after making a digital examination of a wound, I noticed that the cuticle upon my finger had been injured by a sharp spiculum of bone : no more was thought of this until a few days after, when I was awakened at night by a burning pain in my finger, which extended up the forearm to the shoulder ; this was soon followed by a headach, and a generally dull, uncomfortable feeling ; the strong nitric acid was freely ap-

plied with a stick to the abraded surface, which was now inflamed and very painful. After two applications of the acid the pain almost entirely disappeared, and no further trouble was experienced.

All of the nurses, with one or two exceptions, were attacked in the same way, but the disease with them was not so easily limited, because energetic treatment was not soon enough adopted.

Case No. III. illustrates the contagious nature of the disease, as the nurse attendant upon patient, as well as the one occupying the adjoining bed, was *attacked by the disease*.

CASE III.—Langford, Confederate, wounded in the groin at the battle of Antietam. On examination upon admission into the hospital, it was found that the femoral artery had been injured at a point about one inch below Poupart's ligament, and that an aneurism had resulted from it. This was operated upon ten days after by Dr. R. F. Weir, surgeon in charge, who tied the external iliac in its lower third. The operation was successful, and in two weeks the wound had nearly healed, when it took on an unhealthy action, and patient then complained of a burning pain in it. Anticipating what was coming, he was immediately moved to a stone building where there had previously been no gangrene; and here, November 21, he came under my care. He remained here four days before the disease became sufficiently developed to justify his removal to the gangrene tent. November 25.—Patient is very desponding, and is growing weaker day by day; has considerable headach; pulse 120, and almost imperceptible; tongue furred, brown, tip and edges red and dry. The ulcer, which is three inches in width, extends from the pubes up nearly to the anterior spine of the ilium; has an unhealthy and sloughy appearance. Patient complains of a slight burning pain in the wound, the edges of which are everted, jagged, and undermined for about two inches; the integument is indurated and tumefied, and extremely sensitive to the touch or the least movement of the limb; characteristic odor not well marked. The sinuses extending under the integument were freely laid open, and the surface of the ulcer scraped with a spatula, to which the acid was first applied with a mop, and then worked in with a stick, so as to get it down to the comparative healthy tissue, and was also applied in a similar manner to the tissue surrounding the ulcer, and in this way destroy both the cuticle and cutis vera, and thus limit the extension of the disease. Superficially antiseptic poultices were applied, and opiates given to relieve pain; takes half an ounce of brandy and beef-tea every half hour. Nov. 26.—Although the pain following the application of the acid was so severe as to cause slight convulsions for a time, patient is feeling better to-day. Pulse 108 and gaining in strength. Fearing that the progress of the disease had not been entirely arrested, the acid was again thoroughly applied. Takes stimulants and tonics, with fifteen grains of tartrate of iron and potass three times a day. Nov. 28.

—The black, charred slough has separated, revealing a healthy, granulating surface beneath. The extreme sensitiveness of the touch, together with the induration and swelling of the surrounding parts, has almost entirely disappeared. Applied oakum saturated with acid wash to the ulcer. Dec. 5.—Patient represents himself as feeling much better; mind hopeful and cheerful; appetite good; ulcer is cicatrizing rapidly. Continue stimulants and tonics. Dec. 15.—All unfavorable symptoms have disappeared, and patient is regarded as convalescent.\*

The nurse attending upon patient before his removal to the gangrene tent, and the patient occupying the adjoining bed, to whose stump Longford's sponge, by mistake, was once applied, were both attacked by the disease, and were under treatment for a month in the gangrene tent.

Until 1813 hospital gangrene was generally considered as a constitutional affection, but the indifferent success which attended its treatment as such during the Peninsular War led European surgeons to regard it more as a local affection. In sixty cases of hospital gangrene which have come under my observation, in only seven cases were the local manifestations preceded by constitutional symptoms. In forty-seven cases constitutional symptoms followed the sloughing, and in six cases there were none during the entire course of the disease, thus showing fifty-three cases in support of its local nature. Again, in twenty cases the patients had other wounds besides those affected with the disease, and in eighteen of these the unaffected ulcers continued to cicatrize healthily while the disease was rapidly extending in the others. Messrs. Blackadder, McLeod, and Taylor, regarded the disease at first as a purely local affection; while Mr. Coate, who observed the disease in St. Bartholomew's Hospital, is disposed to give it a constitutional character, although he recognizes a stinging pain as the first symptom of the disease.

From the local symptoms having so generally preceded the constitutional, and from the power of the acid in arresting the disease, as well as from the condition of unaffected wounds, hospital gangrene, as seen here, was regarded as a decidedly local affection, capable of giving rise to severe constitutional disturbance.

The pain in fifty cases was described as burning or stinging, and in ten cases it was not observed. The odor which Guthrie regards as pathognomonic was noticed in fifty-three cases; in the seven remaining cases, in which it was not recognized, the disease was of a very mild type. The circular form also spoken of by the same author, and regarded by him as of equal importance, was seen in but few cases.

With one exception no cases of recent wounds were attacked by the disease, although operations were frequently being performed.

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\* For two months after this date the patient was up and about the ward, when secondary hemorrhage, following sloughing of the sac, supervened, and in four days resulted fatally.

It seemed to choose by preference nearly cicatrized ulcers, principally those situated upon the lower extremities: these formed three-fourths of the whole number of cases, those on the body one-sixth, and on the upper extremities one-twelfth. Its occurring so much more frequently upon the lower extremities may be accounted for by the fact that patients having wounds upon these parts were more likely to be confined to bed, and thus prevented from free access to fresh air. The predilection of the disease to attack wounds of exit rather than of entrance, as noticed by McLeod in the Crimean war, has not been seen here.

Having previously regarded hospital gangrene as a constitutional affection, nothing but simple local applications were at first applied, in connection with constitutional remedies; but, finding that this would not limit the extension of the disease, the following course was adopted, which proved so successful that but little change was made in it during the prevalence of the disease in this institution: As soon as the affection was recognized the patients were immediately removed from the barrack to a tent fitted up for the purpose, where fresh air could be plentifully supplied. Ether being administered, the sinuses were freely laid open, and the wound enlarged, if necessary, to expose all of the affected parts. After having removed the pulaceous slough with the scissors, the surface of the ulcer was scraped with a spatula, and nitric acid applied with a mop and worked in with a sharp stick. In a similar manner it was then applied to the surrounding comparatively healthy tissue, which would limit superficially, for a time at least, the extension of the disease, and relieve almost instantly the burning pain. If the case was very urgent, instead of waiting two or three days for the slough to separate, it was forcibly removed, or, more correctly, dug away, and a fresh application of the acid made. One application was not always sufficient, especially if the disease was working among the tendons or underneath deep fasciæ; antiseptic poultices were applied until the slough began to separate, when the following lotion was substituted: acid. hydrochloric,  $\frac{1}{2}$  oz.; tincture opium, 3 oz.; water, a pint. The constitutional treatment adopted consisted of the use of brandy and quinine, with fifteen grain doses of tartrate of iron and potass three times a day.

The average number of applications of acid in the sixty cases was six, maximum twenty. The average length of time required to limit the disease and restore healthy action to the ulcer, two weeks; maximum, six weeks.

Notwithstanding that concentration of the disease, so to speak, was in a great measure prevented by scrupulous attention to cleanliness and ventilation, and the removal of all patients, as soon as attacked, to a tent, and the transfer of others to general hospitals, the disease continued unchecked for nearly four months.

In only one case was it directly the cause of death, and in only three, where the disease was present in a mild form, did it contribute to a primary affection in bringing about an unfavorable termination. Nor has it been followed by pyæmia, which is said

to be of frequent occurrence, or by secondary haemorrhage, although the middle third of the posterior tibial artery was destroyed in one case, and the brachial and femoral arteries laid bare in others.

The absence of pyæmia and secondary haemorrhage I have thought to be due to the free application of the strong acid, and have accordingly applied it or some other mineral acid to all unhealthy wounds in my barrack, and for six months have not had a single case of pyæmia, although previously it was of frequent occurrence.

May it not be that these two allied diseases, hospital gangrene and pyæmia, depend upon a poison, perhaps of an animal or septic origin, in the wound, which a dilute mineral acid, used as an injection, has the power to destroy, and thus prevent systemic affection?

No microscopic examinations were made here for want of proper conveniences.—*Amer. Med. Times.*

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*Diseases of the Respiratory Organs in Children.* A Lecture by  
the late C. VAN ALEN ANDERSON, M. D., Physician to  
Children's Department, Demilt Dispensary, N. Y.

#### CROUP.

At our last meeting, gentlemen, we studied the nature and consequences of unexpanded and of collapsed lung, and of the different forms of coryza. We found that the first produced death, not by disease, but by a non-fulfillment of a vital function; and that the second—an inflammation of the mucous membrane—proved fatal through an interference with the nutritive processes, or else by a directly lowering influence upon the general system. To-day, I propose to bring to your notice a complaint which affects the larynx and trachea—which shuts the door of the respiratory apparatus against the life-giving air, and kills by the cruel process of suffocation; in other words, CROUP, or cynanche trachealis. It is, as you know, a peculiar form of laryngitis, occurring most frequently in children, and distinguished by the formation of a false membrane in the air passages.

Its history is interesting. But by the word history I do not mean the description of the disease itself alone; I mean also the first recognition of it by medical men, the various opinions that have been promulgated, and discoveries that have been made in relation to its nature, and the numerous steps that have been taken one after another until we have acquired our present really imperfect acquaintance with it. It seems to me that this kind of knowledge should be more cultivated by us; for we have arrived at that stage of our science when it becomes apparent to the dullest that medicine is yet in its infancy; that wonderfully illimitable, unexplored fields lie before us; and so, by sometimes looking back

to the point from which we started, and comparing our utter ignorance then with the glimmer of light that we have now, we may gather fresh courage for more brilliant discoveries in the future.

Croup appears to have been known, in a dim, confused way, to the most ancient medical writers. Hippocrates makes a brief, indistinct mention of a disorder that has been thought by some to be this disease. A more faithful description is found in the works of Aretæus of Cappadocia, a physician who practiced in Rome between the reigns of Vespasian and Adrian. Many passages are exceedingly graphic, as for instance the following picture of the last stage: "The pallid or livid countenances of these patients assume a sad expression, while the tonsils are pressed together. When they lie down they rise up again that they may assume a sitting position, not enduring a recumbent position; but if they are sitting up, wanting rest, they are again forced to lie down; and many of them standing upright, walk about, for they are unable to remain quiet. Inspiration is great, expiration truly small. There is hoarseness, and want of voice. These signs rapidly grow worse, when suddenly they die in collapse." Artius, an Alexandrian, who flourished about four centuries later, while using the words of Aretæus, added to them many comments and particulars which render it beyond doubt that in his day the disease was well known, and was the same that had been mentioned by the Roman writer.

The next mention of croup appears at the end of the sixteenth century, in the works of Baillou, of Paris, who was the first to dwell on its anatomical characters. In the winter of 1576 it prevailed extensively at Paris, carrying off both children and adults, among the latter Baillou's father-in-law. He was therefore interested to a great degree in discovering its true nature, and the treatise, supported by clinical testimony, which he published, has since been extensively quoted, as affording the first scientific observations of modern times.

Whether it was that attention was really first drawn to this disease by Baillou, or whether, like some maladies of more recent periods, it then began to extend its influence more widely, and to penetrate more deeply into the various strata of human life, this much is certain, that since his time frequent and severe epidemics of croup have been observed by medical authorities. I am myself inclined to think that the disease did in fact become more widely diffused in the sixteenth century. The ancients were quite as keen in their remarks upon disease as we moderns are, and, indeed, many of our most successful remedies were anticipated by them—take, for example, the proposal of Artius to cure aneurism by ligation of the affected artery, an operation which it required so great a genius as John Hunter to revive: or take the accurate observations upon pathological conditions which are found in the works of Hippocrates, the very father of medicine—and it seems to me that they could hardly have overlooked a disease so distressingly fatal, and so distinctly marked in its various symptoms and stages, as croup is among us, had it prevailed then as generally as it does now.

Moreover, many of us—not only those who have been in practice many years, and who are therefore entitled to guide us by their wisdom and experience, but also younger members of the profession—have seen diseases, for a long time confined to one country or one district, suddenly taking up their line of march like a conquering army, and seizing upon all known parts of the civilized world. I need not go back to the history of syphilis first appearing at the siege of Naples, and thence extending to all regions of the earth; nor need I refer to Asiatic cholera, starting from the East, crossing continents and oceans in its progress, and leaving its first traces everywhere, so that every year we have a greater or less number of sporadic cases; for, when I mention diphtheria, you will recognize a distemper that within the last four years has assumed the character I mention; that has become a native of England and of America, in both of which countries it was before to a certain extent unknown. Why croup, therefore, should have remained quiescent before, and should have spread only since the time of Baillou, I do not understand; but that it has done so appears to me not by any means improbable.

Next it made its appearance in Spain, and prevailed there for many years. It received in that country the name of *garotillo*, because those who were attacked by it perished as if they had been strangled by a cord. Mercatus, the physician of Philip II. and Philip III., published his observations upon it under the title of *consultations*. He remarks upon it as the most serious disorder he had ever witnessed, and is astonished at the rapidity with which it destroys life, and at the disproportion between the real danger and the appearance of the disease. Another Spanish physician also, who wrote twenty years later, does not differ in his estimate of it.

In the month of June, 1618, croup was first seen in Italy, in Chiaia, a market-town of Naples. Many children were destroyed by it, very much to the alarm of the doctors who had never seen it before. It was considered to be a consequence of infection rather than of contagion, and was ascribed to the exhalations which escaped from the ground after the earthquake of 1616; but its strangulatory nature was still insisted on by all who were brought in contact with it. There was one remarkable point about it, namely, that it first seized on the lower animals who kept their muzzles nearest the earth, then on children in the succeeding years. At the same time, or shortly afterwards, there were epidemics of croup at Palermo and at Messina.

Since that period frequent descriptions of croup have been brought before the world. Ghisi in 1747 gave an exact account of the epidemic which showed itself at Cremona in the month of May of that year. He dwells particularly upon the fatal nature of the disease, and gives a faithful picture of the sufferings of those who perished by it; moreover, he makes mention of the case of a little girl, who expectorated a tubular false membrane some moments before dying, and of finding in the trachea of another child opened

after death, a similar formation. Treatises were written upon it by Starz, in 1749; Middleton, in 1752; Bergino, in 1755; Berghen, in 1759; Wahlbom, in 1761; and Wilcke, in 1764.

The name of *Croup* was first proposed for this affection in 1718 by a Scotchman, Dr. Blair, of Cupar Angus; and a valuable essay, drawn from original observations, describing the disease with accuracy, and proposing tracheotomy for its relief, was published at Edinburgh by another Scotchman, Dr. Home, in 1765. He was succeeded by several writers in quick succession, one of the ablest of them being Dr. Samuel Bard, of this city, a founder of the New York Hospital, and an illustrious member of the medical faculty of Columbia College (Prize Essay by Albers, of Bremen, in 1805).

Attention was more particularly called to the true nature of croup in consequence of two memoirs read before the French Academy of Medicine in 1821, by M. Bretonneau, of Tours. An epidemic of the disease known since the time of this distinguished man as diphtheria, attracted his earnest and anxious study of its phenomena. It is unnecessary to enter into a full account of his researches, though the reasoning by which he reached his conclusions displays great talent. After having conclusively shown the existence of a disorder characterized by the effusion of false or mucous surfaces, and before his time confounded with malignant sore throat, he attempted to prove its identity with croup. He did indeed triumphantly demonstrate that, when the pseudo-membrane of diphtheria extends to the larynx and trachea, it produces exactly the same symptoms as any false membrane in the same situation, and cited many cases which firmly sustain his position. But after the publication of his views in 1826 there were many and vigorous protests against croup and diphtheria being considered the same disease, not only by English writers, but also by continental authorities. Bucheteau was the first, I believe, to raise his voice against the sweeping assertions of the physician of Tours, which he did in the same year 1826; and he was followed by Dr. Abercrombie in a treatise on an epidemic which prevailed in Edinburgh, and in which a clear distinction was made between diphtheria and croup—and by others in whose works the same difference was insisted upon.

I will not weary you by an account of the various opinions, *pro* and *con.*, which have been urged for the last thirty years. I shall content myself with stating that the distinction between the two diseases is now, as far as my information goes, clearly recognized; at any rate, that among American physicians diphtheria is not croup, but only a secondary form of it; and, therefore, I shall draw your attention to the diphtheritic inflammation, merely as a modification of the disease.

Croup is one of the most alarming and fatal maladies that curse humanity, and numbers various distinguished victims. The brother of the present Emperor of France was destroyed by it, his sad and sudden death producing numerous valuable works upon the disease in consequence of the offer of a prize by Napoleon I.

General Washington is claimed by Bretonneau as one among the numerous martyrs to the diphtheritic form. Any one who reads our weekly bills of mortality will discover its frequency, and the danger that attends its presence. Generally it attacks children between the ages of one and twelve years, but oftenest those under five years of age. It has been seen in an infant of eight days old, in one of three months, and in one of eight months. It appears from the fifth report of the Registrar-General of Great Britain, that while 1022 out of 98,391 deaths in London took place from croup, 1013, or 99·9 per cent., occurred before the age of fifteen, and 879, or 87·8 per cent. before the age of five years. Of twenty-six cases which Dr. West has recorded, twenty five occurred in children under five years, and twelve in children under two. Andral gives the following table of ages in 332 cases : He found it during the first month in 1 case, during the third month in 1 case, during the fifth month in 1 case, from five to twelve months in 18 cases, from one to two years in 61 cases, from two to three years in 45 cases, from three to four years in 54 cases, from four to five years in 42 cases, from five to six years in 29 cases, from six to seven years in 29 cases, from seven to eight years in 3 cases, from eight to eleven years in 6 cases, from eleven to fifteen years in 7 cases, from fifteen to thirty years in 13 cases, from thirty to fifty years in 10 cases, from fifty to seventy years in 12 cases.

In Philadelphia, during the two years preceding 1845, 475 deaths are reported from croup in infants between two and five years, 238 in those between one and two years, 319 in those under one year, 112 in those between five and ten years, and 6 in children over ten years.\*—*Amer. Med. Times.*

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*On the Specific Gravity of Urine as a Measure of its Solid Constituents.* By EDWARD NICHOLSON, F.C.S., Staff Assistant-Surgeon.

Rules have been given to find, from the specific gravity of human urine, the quantity of solids or of urea which it contains. Dr. Golding Bird's rule for ascertaining the solids of the urine was to multiply the excess of specific gravity over that of water by 2·33 ; and Mr. Haughton, in his valuable investigations, "On the Constants of the Human Urine," states that the quantity of urea bears a very simple relation to the specific gravity. But some experiments I have been making on the subject are far from confirming these results ; and when the sources of the urinary constituents are considered, it will be seen that such a simple ratio between the specific gravity and the urea would be very unlikely to occur. If the solids of the urine were solely the result of tissue-metamorphosis, and the mutual proportions of the different constituents were constant, these rules would be perfectly applicable. But the solids of the urine are not solely the result of tissue-met-

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\* Condie, Dis. of Chil.

morphosis, but also of many accidental circumstances; and the mutual proportions of many of the constituents are far from constant. The sulphuric acid of urine being nearly all derived from the disintegration of nitrogenised tissue, its quantity is in very constant proportion to the urea, while phosphoric acid, being mainly produced by the disintegration of the organs of the nervous system, is often independent of the urea. I have seen the phosphoric acid fall to less than one-tenth of its normal proportion to the urea, while the sulphuric acid remained as usual in constant proportion. Another disturbing element is the chloride of sodium. This salt follows no law in its proportion in the urine, and its erratic course affects most considerably the specific gravity.

The line given by Mr. Haughton as representing the urea in urine of gradually increasing specific gravity, was of a very trifling curve; it formed the arc of a large circle, cutting the specific gravity-line in two points, but for practical purposes corresponding to it very closely. It will be seen in the following table, that the ratio of the specific gravity to the urea is totally irregular, and that none of the rules given would give the smallest approximation to the amount of urea; and this is true whether the urine of one individual or of several be taken, and whether the subjects be in health or in disease. As I had long been in hopes that some simple ratio existed between the urea and the specific gravity, I took especial care, in the analyses I performed, to note with accuracy the specific gravity of the urine. To this effect, all the determinations of specific gravity were made by the balance: for I find that urinometers, even of the best construction, give an error amounting often to .002. The fifty-two specimens of urine given in the Table form the totality of my analyses, in which urea and chloride of sodium were determined; many other analyses (made for pathological inquiry), in which only one or other of these substances was determined, have been rejected. Owing to the occurrence of several cases under my care, in which the specific gravity was very low, I am enabled to show a considerable range of specific gravities. The individuals, whose urine has been analyzed, were ten in number, two of whom were healthy adults, the others were patients in the General Hospital, Fort Pitt.

I will distinguish them as follows:—

A.	Disease—	Intermittent fever .....	4	observations.
B.	do.	Chronic dysentery .....	8	do.
C.	do.	Anæmia .....	1	do.
D.	do.	Enlarged liver .....	11	do.
E.	do.	Enlarged spleen.....	12	do.
F.	do.	Paralysis.....	1	do.
G.	do.	Albuminuria (slight) .....	3	do.
H.	do.	do. ....	1	do.
I.	Healthy .....		10	do.
K.	do. ....		1	do.

	Specific gravity.	NaCl per 1,000.	Urea per 1,000.			Specific gravity.	NaCl per 1,000.	Urea per 1,000.
1. A .....	1001·14	.85	4·	27. E .....		1013·94	6·	21·5
2. B .....	1003·34	3·1	4·5	28. E .....		1014·34	7·4	19·
3. B .....	1004·54	3·5	9·	29. D .....		1014·5	6·8	21·4
4. B .....	1005·38	4·	10·	30. E .....		1015·	7·2	21·
5. B .....	1005·64	4·35	8·	31. E .....		1015·16	8·2	21·5
6. B .....	1005·94	4·5	8·5	32. H .....		1015·26	4·8	27·
7. B .....	1006·38	4·5	9·5	33. E .....		1015·8	7·	24·5
8. B .....	1006·86	5·5	7·5	34. I .....		1016·2	10·	21·
9. C .....	1007·	2·5	7·2	35. D .....		1016·34	8·1	20·5
10. D .....	1008·	4·	10·	36. D .....		1016·46	6·8	22·5
11. A .....	1008·44	4·2	12·	37. D .....		1016·86	8·7	20·5
12. E .....	1008·5	3·6	12·5	38. E .....		1017·34	6·	27·
13. A .....	1009·	2·05	15·5	39. I .....		1017·9	8·1	25·5
14. B .....	1009·38	6·3	13·5	40. E .....		1018·	7·5	28·
15. D .....	1009·6	4·8	14·5	41. E .....		1018·14	7·2	26·
16. D .....	1009·7	5·2	12·5	42. I .....		1018·94	7·	28·
17. A .....	1009·7	9·7	12·	43. I .....		1019·64	10·	24·
18. E .....	1010·22	4·6	16·	44. K .....		1019·78	10·5	22·5
19. E .....	1010·44	5·2	15·	45. E .....		1020·84	7·6	32·
20. D .....	1010·64	4·6	15·	46. G .....		1021·2	5·	37·5
21. D .....	1011·3	5·1	16·7	47. I .....		1021·3	11·7	32·5
22. F .....	1012·5	5·4	16·	48. I .....		1022·06	12·1	33·
23. D .....	1012·54	5·8	18·5	49. I .....		1023·02	7·6	31·5
24. G .....	1012·74	4·6	18·5	50. I .....		1024·4	8·	34·
25. G .....	1013·	4·4	18·5	51. I .....		1026·8	9·9	37·
26. D .....	1013·68	5·5	19·5	52. I .....		1027·	8·3	38·

The influence of chloride of sodium over the ratio of urea to specific gravity cannot fail to be remarked. In the specimens of equal specific gravity, a slight variation in the quantity of chloride of sodium is accompanied by a considerable fluctuation of urea in the inverse direction. The great influence which chloride of sodium thus possesses over urea is explained by the fact, that, whereas a solution of chloride of sodium of sp. gr. 1010 contains 14 per 1000 of the salt, a solution of urea of the same specific gravity contains 35·6 parts per 1000. This fluctuation, as exemplified in the series 27 to 34, is often very regular, and in many cases it is sufficient to add to the specific gravity the difference between it and the chloride of sodium, to obtain the urea within 5 per cent. of error; but in many cases the error may amount to as much as 20 per cent., the amount obtained being below the real number in dilute urines, above it in concentrated specimens.

It is evident from these results that determining the specific gravity only of the urine is of no good for calculating the amount, either of urea or of solids excreted; but that, by taking into consideration the amount of chloride of sodium (which can be determined in two or three minutes by a standard solution of nitrate of silver), the quantity of urea may, within certain limits, be calculated for clinical purposes. However, the necessity of an accurate

determination of specific gravity renders it far more advisable to put aside all inexact methods, and proceed at once to the volumetrical estimation of urea.—*Jour. of the Chemical Society* (London).

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*Foreign Body in the Auditory Canal.* By D. B. ST. JOHN ROOSA, M.D., New York.

A soldier standing guard before the hospital-tent of a regiment, suddenly felt an insect passing into his ear, and a sensation of pain, causing vertigo, and compelling him to be relieved from his duty. On examination of the ear, as well as the imperfect means allowed, no aural speculum or sunlight being at hand, the presence of a small bug was thought to be ascertained. This was done by one of the hospital attendants, and he attempted to remove it by means of forceps and other dangerous implements. Only more pain was caused, when I was sent for, and ordered the ear to be syringed for fifteen minutes with warm water. This relieved the pain, and the insect was thought to be removed; but as the operations were carried on by the light of one candle, it was somewhat difficult to decide certainly. External otitis resulting from the lodgment of the insect, it was treated by applications of warm water to the auditory canal and membrana tympani; during the acute stages, by counter irritation over the mastoid process, and later on, with a mild lotion of plumb. acetat, applied to the membrana tympani. Ten days after the supposed lodgment of the insect, during one of the applications of warm water by means of a syringe, the bug, as it proved to be, passed out, of course long since dead. A slight otorrhœa existing, and the patient having also an ulcer of the leg, on the moving forward of the regiment, I was obliged to leave him at a General Hospital, and hence lost sight of the case.

This case is unsatisfactory from various reasons. The absence of aural specula, which should be in each regimental instrument-case, and my inability to get one made to answer the purpose, prevented a full examination of the auditory canal at the beginning of the case, the only possible time for a satisfactory one, the subsequent external otitis preventing any certain diagnosis as to the presence of the bug.

The application of the forceps to attempt its removal was decidedly wrong, for that instrument should very rarely, if ever, be introduced into the ear for the removal of foreign bodies. Its use is almost certain to excite inflammation, and that of a dangerous character. We should beware of probes, forceps, *et id genus omne*, in our treatment of the ear.

The application of warm water, filling the external ear completely with it at frequent intervals, I consider, with the aid of leeches applied on the tragus in extremely acute cases, the very best alleviator of the terrible pain which is one of the evidences of

acute otitis. It is much to be preferred to the application of poultices, which are more apt to lead to such relaxation of the parts as to cause suppuration, and is more convenient and clear. As far as I know Dr. V. Tröltsch, of Wurzburg, Germany, was the first to recommend this remedy as particularly adapted to quieting pain in the ear.

The application of a steady and comparatively large stream of water is the only certain and safe way of removing foreign bodies, such as peas, beans, buttons, insects, which may be inserted or find their way into the ear.—*American Medical Times.*

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*An Estimate of the Extent to which Human Life has been Prolonged or Abridged by Ovariotomy* (prepared by E. H. JANES, M.D.),

Was recently the subject for discussion in the Royal Medical and Chirurgical Society of London, introduced by Dr. Robert Lee, who examined the tables published by Dr. Clay in 1860, comprising 567 cases, of which 242 were considered successful, 235 died from the direct effects of the operation, leaving 90 cases concerning which no information is furnished whether life was prolonged or abridged. From this analysis, and the number of unpublished unsuccessful cases he has succeeded in collecting, Dr. Lee "considers it demonstrated that ovariotomy is an unjustifiable operation where the life of the patient is not in immediate danger, and where there is not a great probability of the life of the patient being saved by the removal of the disease." He further stated that his attention had been early called to this subject by a fatal case in which a fibrous tumor of the uterus had been mistaken for a tumor of the ovary, and removed. He had carefully examined every case of ovarian disease that came under his observation, the result of which was that he believed it impossible in any case to determine before actually laying open the abdomen what the condition of the viscera was, and hence it was not justifiable to perform such a dangerous operation at a venture.

Mr. Macilwain thought more accuracy in diagnosis was wanted, that the disease should be studied from the laws of general pathology, and that the danger of removing the ovary had been exaggerated. He agreed with Mr. Spencer Wells that the after-treatment, repose, was the Alpha and Omega. Mr. W. had given him the addresses of twelve patients on whom he had operated, ten of whom he had seen, one a young woman from whom Mr. W. had removed a tumor weighing forty pounds, and who was now, with the other nine, quite well. From this he felt convinced that the question of ovariotomy was worthy of most serious consideration, and should not be the subject of mere hostile interchange of opinions; that the facts required could not be gathered by a single person,

however large his experience, but that by vigorous action of the Society enough facts might be accumulated in a few years from which more definite conclusions could be drawn. To this end he suggested that the council issue a series of questions for the collection of information concerning these operations.

Mr. Baker Brown felt extremely obliged to Dr. Lee for bringing this subject so frequently under discussion, for the greater the investigation the greater the elimination of truth. He had frankly published every unsuccessful case in his own practice, and he believed as a rule other ovariotomists had done the same. He had performed the operation fifty-three times during the past twelve years, and the result had been twenty-nine recoveries and twenty-four deaths. The mortality in his practice of late had been very much less than during the first years, there having been in the thirty-one operations performed in the London Surgical Home only ten deaths, and only four in the last fifteen operations there and in private practice. He believed it to be the most dangerous operation ever performed; that he never advised a patient to have it performed, but, after having placed all the facts before her, he left her, assisted by her friends, alone to decide; and although easy of performance, the complications are often of the most serious nature. He considers the most important part of the question that of diagnosis; and although he had devoted more than thirty years of his life to the careful study of the subject, and had paid special regard to the question of diagnosis, he unhesitatingly affirmed, that there were no rules that could be laid down so absolute as to enable any surgeon to diagnose with perfect certainty before operation. He therefore hoped Dr. Lee would continue to devote his powers of mind to the solution of this difficult problem, believing that by so doing he would do more good service, and strengthen the hands of the operating surgeon, than by any attempt to discourage ovariotomy. He had, ten years before, operated on his own sister, who recovered, and since married, and had recently given birth to her fifth child; and if occasion offered, he should follow the same plan in any one near and dear to him, believing the operation justifiable, and entitled to be recognized as a legitimate one in surgery.

Dr. Tyler Smith said the peculiarity about ovarian disease is, that, beyond the material abstracted from the system, it is only injurious by mechanical pressure. It does not otherwise threaten life. He therefore did not think it right to operate until the health began decidedly to give way, without waiting until the health was so completely broken as to destroy the chances of the success of the operation. By so doing we run far less risk of peritonitis than by operating when the patient is in robust health. The only evil of delay is the possible formation of adhesions; but even these do not greatly diminish the chances of success. By acting upon these principles he has been successful in twelve out of fifteen cases; and he has only made one error in diagnosis, in which the disease was cancerous tumor of the mesentery. \*

Mr. Spencer Wells and Mr. Charles Hawkins both spoke in favor of the operation when guided by the principles advocated by Mr. Tyler Smith; and both urged the adoption of Mr. Macilwain's suggestion.

Notwithstanding Dr. Lee's incredulity concerning the propriety of this operation, it has certainly been more successful in this country, as will appear when the subject is brought before the New York Academy for discussion.

Dr. Charles Clay has given to the *Obstetrical Society of London* some statistical observations on ovariotomy, in which he stated that he had performed 109 peritoneal sections, of which 104 were for ovarian extirpation, three for cutting down upon the tumor to establish ulceration where its removal was impracticable, one for Cæsarean operation, and one for the removal of both uterus and ovaries. Of the 104 ovarian cases, 72 recovered, 32 died; all the ulcerative cases recovered; the Cæsarean section lived to the fifteenth day; and the case of the entire removal of both uterus and ovaries recovered. Of the 32 deaths, 10 died from the immediate effects of the operation, 10 from inflammation, 10 from prostration, and 2 from haemorrhage.

He attributes much of his success to the raised temperature of the room for the operation. He values chloroform highly, but would not employ it if the woman could face the difficulty without it. He operated fourteen times before chloroform was discovered, and nine recovered. He attributes the distressing vomiting in a great measure to the use of chloroform, as he saw but little of it in the fourteen cases where it was not used. For the relief of this he recommends patience until the blood has got rid of its carbon, simple drinks, and as little food as possible. In all cases the length of the incision was commensurate with the tumor to be extirpated, he preferring a large incision to a small one.—*Amer. Medical Times.*

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*Two Successful Cases of Ovariotomy.* By W. H. BYFORD, M.D., Professor of Obstetrics, &c., Medical Department, Lind University.

CASE I.—Mrs. H., aged 38 years, has been gradually increasing in size with ovarian dropsy, for the last four years. She first observed a small tumor in right iliac region. Before removal, it filled up the pelvis and abdomen, until the patient was as large as if at full term of pregnancy. Her suffering for several months had been very great, on account of impaction of the pelvis, and her general health was rapidly deteriorating. The tumor was multilocular; and with its contents, weighed nineteen pounds.

The operation for its extirpation was performed in presence, and with the assistance of Drs. Shumway, Cheeney, Davis, Bevan

and Jones. An incision between three and four inches in length in the linea alba, about equal distances from the umbilicus and pubis, enabled us to draw off the contents of the numerous cysts with the trochar, and extract the whole tumor with great facility and dispatch. The pedicle was transfixated by a needle carrying a large double hempen ligature, and tied in two parts firmly as I could draw the twine. The wound was closed by three silver pins, the lower of which was passed through the middle of the pedicle, so as to confine the cut edge upon a level with the skin of the abdomen. I should have mentioned, that after being tied, the pedicle was divided between the ligature and the tumor with the knife. When the tumor was first exposed, there were within view, ramifying over its surface, a number of large veins, several of those were larger than a goose-quill. The pedicle was large and fleshy, showing several large venous trunks. There were no adhesions anywhere; and the only obstacle to a ready removal of the tumor, when lessened by evacuation, was caused by a cyst that completely filled up the cavity of pelvis. It was so completely moulded into the inequalities of that cavity, that some force and address in manœuvring were requisite to lift it out. The wound was covered with a water compress, and the abdomen encircled with a broad woolen binder. The operation and dressings were finished in eighteen minutes, after the patient was completely under the influence of chloroform. Dr. Shumway, whose patient she was, and to whom much credit is due, for his assiduity and skill in the after management of the case, kept full and accurate notes; they are highly interesting on several accounts, and will be read with profit by those who are studying the subject. They are subjoined:

Operation was completed at 3 o'clock and 33 min., October 29th. 4 P. M., vomited once a little water; pulse 76; complains of smarting pain at seat of wound, and severe pain in the bowels: "like the pain of colic;" ordered tinct. opii. 40. 6 P. M., much more comfortable; says that she has not a particle of pain in the right side, but complains of pain in the left hypogastric region and down the left thigh; pulse 88, full and soft. 6.30 P. M., pain continuing, gave tinct. opii. 30 gtts. 8.30 P. M., still complains of severe pain in left hypogastrium and thigh; pulse 88; gave tinct. opii. 40 gtts. 11.30 P. M., patient easier; has slept, with a few minutes intermission now and then, since 9 P. M.; pulse 88, as before. 12 P. M., return of pain; gave tr. opii. 30 gtts. Thursday, 30th, 3 A. M., used catheter at patient's request; comfortable; pulse 88. 9 A. M., pulse 90, full and soft; complains of return of pains in the left thigh; gave tinct. opii. 30 gtts. 12 M, complains of thirst, otherwise very comfortable; ordered *ice, ad libitum*; repeat tr. opii. 30 gtts. 3 P. M., symptoms unchanged; relieved bladder with catheter; tinct. opii. 30 gtts. 5.30 P. M., no change, patient comfortable. 9 P. M., patient cheerful; ordered tr. opii. continued every three hours if she is restless, or complains

of pain. Friday, 31st, 8.30 A. M., found patient comfortable; has slept at intervals during the night; pulse 90; skin cool; does not complain of pain, except a slight smarting at the seat of wound; cath. 8.30 P. M., finds patient feverish; pulse 100; countenance anxious; skin dry and hot; very restless and irritable; much troubled by secretion of mucus in the trachæ, with desire to cough; slight fullness of the abdomen; had taken 40 drops tinct. opii. at 4 P. M., ordered 40 drops more, as she was still unable to pass water; her bladder was relieved by use of catheter. 10 P. M., less bronchial irritation; continue tr. opii. 30 gtts. every three hours. Saturday, Nov. 1st, 8.30 A. M., more comfortable; pulse 96, softer and fuller; has slept at intervals during the night; tympanites increased; ordered em. terebinth; continues tr. opii. 12 M., considerable tympanites; complains of pain in the bowels with desire to go to stool; upper part of the wound looking well; slight phlegmonous inflammation about the pedicle; pulse 100; continue em. terebinth and tr. opii. 6 P. M., tympanites increased; but less tenderness over the abdomen than there was last night; more cheerful; pulse 96, soft and full; gave 5 grs. calomel; continue em. terebinth and tr. opii., with b. c. soda. Sunday, Nov. 2d, 8.30 A. M., found patient cheerful; she says that "she is almost well, and meant to have had her clothes changed before the doctor came;" nurse was engaged making her toilet; ordered all operations of that kind to be suspended; pulse 100; tympanites increased, but no tenderness over the abdomen; continue em. terebinth, tinct. opii. and *perfect rest*. 4 P. M., found patient much worse; was taken soon after we left in the morning with severe pain in the left hypogastrium; pulse 128, small and quick; skin hot and dry; tympanites or flatulence much increased; gave tr. opii. 40 gtts., and ordered enema of

Ol. Terebinth.....	3ss.
Ol. Ricini .....	3i.
Yolks of 2 eggs.....	
Gruel.....	Oj. M.

6 P. M., enema retained; gave another of soap-suds, which brought away a large amount of gas, but no feculent matter; pulse 120; pain subsided; abdomen tender; wound looking tolerably well; union appears firm at the upper part; considerable phlegmonous inflammation about the pedicle; ordered the em. terebinth and tr. opii. continued every three hours, and one grain sulph. quina to be added to each dose, and the abdomen covered with a poultice of flax-seed meal, after being rubbed with ol. terebinth; care being taken not to get any of the oil into the wound; gave fl. ext. rhei. and senna, 3ij. Monday, 3d Nov., 8.30 A. M., patient rested tolerably well through the night; pulse 116; abdomen very much distended; wound firmly united at the upper part, but looking unhealthy about the ligatures; cut the ligatures, and removed two of the needles; a serous discharge followed the withdrawal of the

needles ; ordered beef-tea and milk-punch freely ; pinned a bandage tightly around the abdomen ; she does not complain of pain upon pressure ; repeat fl. ext. rhei. et. senna. 12 M., abdomen enormously distended ; patient restless ; pulse 120 ; gave enema, which brought away a large amount of gas, which much relieved the distension of the abdomen ; repeat the rhei. and senna. 6 P. M., pulse 120 ; distension very great ; applied adhesive-straps to support the wound ; complains of no pain or tenderness ; bowels have not moved ; ordered enema, which only brought away a discharge of gas ; gave 12 grs. calomel. Tuesday; 4th, 8.30 A. M., bowels have not moved ; pulse 116 ; only complains of the distension of the abdomen ; ordered bot. citrate magnesia. 2 P. M., the bowels not having moved, gave enema of ol. terebinth, which produced a free movement of the bowels, with discharge of a large quantity of gas, almost entirely relieving the abdominal distension. 5.30 P. M., patient expresses herself as "almost well ;" pulse 108 ; skin cool ; ordered injection, repeated in three hours if the bowels do not move again in the meantime ; continue milk-punch and beef-tea, and give tinct. opii. 30 gtts., after the bowels move again. Wednesday, 5th, 9 A. M., the injection last evening produced a complete collapse of the abdominal wall ; patient slept nearly all night—is very comfortable this morning ; pulse 106 ; no pain, no tenderness, except at seat of wound. 5 P. M., improving steadily. Thursday, 6th, 8.30 A. M., pulse 100 ; no unpleasant symptoms ; wound around the pedicle discharging freely ; takes considerable nourishment. Friday, 7th, same as above. Saturday, 8th, removed the remaining needle which transfixes the pedicle—ligature firm. Sunday, 9th, wound looking well ; patient looking and feeling very well ; appetite good.

CASE II.—I was called, Nov. 5th, 1862, to see Miss P., aged 20 years, at Eleroy, Illinois, suffering with ovarian dropsy. There had been nothing remarkable in the condition of her health, although of rather spare and fragile form, until February last, when she first observed a tumor almost the size of an orange, in the right iliac region. Her menses ceased to make their regular appearance about the same time. The tumor had grown quite rapidly ; and she had suffered for several weeks severely from pressure. At the time of examination, she seemed larger than most women at full term of pregnancy. The patient was examined by, and in consultation with, Drs. L. A. Mease, B. J. Buckley, F. W. Hance, E. C. De Puy, and John Charlton, of Freeport, Dr. R. Hays, Lena, and Dr. J. A. Darling, of Eleroy. It was unanimously decided that the tumor was multilocular, and as it had grown so rapidly, and the patient had begun to suffer from its great size—she could not long survive, if not relieved—that extirpation was the only means of cure advisable, and that owing to the probabilities of a large portion being solid, and the existence of adhesions, the chances of success were less than ordinary. The conclusions of the consultation being submitted to the patient ; with a heroic

determination, which I think had much to do with her recovery, she begged us to give her what she considered the only chance of escape from a lingering and sure death. With the assistance of the above-named gentlemen, the operation was performed in the following manner: After anesthesia was induced by chloroform, an incision in the linea alba, midway between the umbilicus and symphysis pubis, about two inches long, exposed the tumor and evacuated several pints of peritoneal effusion. Upon introducing the finger to survey the tumor, some slight adhesions were torn through. A large trochar was next plunged into one of the presenting cysts, as no fluid flowed out of the canula, it was withdrawn. Attached to it was a thick glutinous semi-fluid, that was so tenacious as to admit of being drawn into a string, two feet long. It was evident that the contents of these sacs could not be thus evacuated. The external incision was enlarged until it was about five inches in length. The abdominal walls pressed closely against the tumor; a free incision made into the cyst, and the contents, almost as thick and dark as tar, pressed out. The same procedure was repeated upon several sacs, until the size of the tumor was considerably decreased. Upon drawing the partially collapsed tumor forward, and examining its sides, firm and extensive adhesions were discovered in every direction in which the examination was pushed. Much of them gave way under the fingers, by using considerable force; there were, however, firm bands of fibrin, from two to three fingers wide, two of them were far around toward the spine, which, on account of their firmness, had to be separated by the ecrasseur. The external wound was again enlarged upward, until it was about nine inches in length, and the tumor lifted out of the abdominal cavity. After passing a double hempen ligature through the centre of the pedicle, and securing it by tying each side firmly as possible, the chain of the ecrasseur was passed through it, close to the tumor, and above the ligature. Owing to the careful attention of the gentlemen present assisting, very little of the contents of the sacs, and, probably, no blood found their way into the abdominal cavity. The external wound was now closed by four pins and several silver sutures. The stump was transfixated, and retained in the wound with its surface even with the external surface, by the pin nearest the pubic extremity of the cut. I should have before stated, that the great omentum which lay on the upper part of the tumor, was adherent throughout the whole extent of contact, but these adhesions were so feeble that they gave way under pretty smart force exerted by the fingers for the purpose.

Very little blood was lost; and the patient bore this terrible operation without any appearance of shock or depression whatever. The time occupied in completing the operation and dressing, was forty-five minutes. A compress wet with water was placed over the wound, and secured by a broad flannel binder. The tumor with its contents weighed 30 pounds. After witness-

ing the extensive adhesions, peculiarity of contents of the tumor, etc., all present joined in expressing the opinion that recovery was hardly to be thought of as a possibility. It will be noticed, that in these two operations, although as great care as practicable—on account of the difficulties of the case—was observed in avoiding extravasation or effusion in the peritoneal sac, no effort by sponging or wiping among the intestines, was made to remove any substance that did escape. Such was the case also in the first operation I ever performed; and I cannot but express the conviction, that the amount of ovarian fluid should be very considerable or acrid in quantity, to justify the rough operation of sponging it out. The notes of the case, after the operation, were kept and forwarded to me by Dr. J. A. Darling, of Eleroy, and I have not altered them, believing them to be a faithful exhibit of the progress toward a cure. Although somewhat lengthy, they show but one interesting circumstance, which is, that "our patient" recovered from the effects of the operation without a single bad symptom :

Operation finished Nov. 5th, 12.30 P. M.; pulse feeble, and 120 per minute; countenance pale; nausea and vomiting from effects of chloroform; complains of pain in back; took teaspoonful of tinct. opii. 2.30 P. M., nausea continues; less pain in back; lies on side, disposed to doze; pulse 120, good volume; natural color returning to face; respiration 40 per minute. 5 P. M., pulse 112, full and soft; resting well; respiration 40 per minute; complains of pain in back; some thirst; took teaspoonful of tinct. opii., which was immediately rejected; 7 P. M., pulse 104; nausea; skin cool, soft and natural;  $\frac{1}{4}$  gr. morphia, which was immediately rejected; complains of pain in back; slight desire to urinate, which was relieved by catheter; has slept some last two hours. 8 P. M., pulse 120; more urgent nausea, otherwise comfortable;  $\frac{1}{4}$  gr. morphia immediately rejected. 8.45 P. M.,  $\frac{1}{2}$  gr. morphia retained. 10 P. M.,  $\frac{1}{4}$  gr. morphia; some restlessness. Nov. 6th, 2 A. M.,  $\frac{1}{4}$  gr. morphia; dozing. 5 o'clock, has slept some;  $\frac{1}{4}$  gr. morphia; pulse 125; desire to urinate, relieved by catheter. 8 A. M., pulse 118; skin cool, soft and natural;  $\frac{1}{4}$  gr. morphia; some nausea. 10 A. M.,  $\frac{1}{8}$  gr. morphia. 11 o'clock, pulse 120; inclined to doze. 1 P. M., skin moist; breathing good; pulse 120, and soft; 1.15 P. M., removed bandage—wound looking healthy; no pain or tenderness; desire to urinate, relieved by catheter; pulse 108; 1 gr. opii. (Tilden's preparation); skin soft and cool; no nourishment taken. 3 P. M., took a little crust coffee. 3.45 P. M., 1 gr. pill opii., with crust coffee for drink; inclined to doze. 5 P. M., pulse 120; complains of back, otherwise comfortable. 5.30 P. M., 1 gr. pill opii.; complains of occasional shooting pains in abdomen; pulse 129. 7.15 P. M., 1 gr. pill opii. rejected. 7.30 P. M., 1 gr. pill opii. retained; inclined to doze. 8.45 P. M., 1 gr. pill opii. 10 o'clock, relieved bladder by use of catheter. Nov. 7th, 6.30 A. M., have given through the night 1 gr. pill opii. every hour and a

quarter ; patient has rested well ; skin cool ; respiration natural ; has no pain, except in back.

Nov. 9th. Our patient, thus far, is exceeding our most sanguine hopes. I will continue notes as taken from my book :

Nov. 7th, 3 P. M., pulse 120 ; tongue, some dry and red at tip, with thirst ; no nausea. 5 P. M., saw patient with Dr. Charlton ; commenced the use of ess. beef, which relishes well ; removed bandage—wound looking well ; have decreased the opii. to 1 gr. every four hours ; tongue dry and slightly coated. Nov. 8th, 3 A. M., patient resting well ; tongue more natural ; pulse 135. 7 A. M., pulse 130. 10 A. M., removed bandage—wound looking good, with very slight suppuration ; pulse 130 ; commenced the use of Tilden's f. ext. veratrum viride, 2 min. every two hours, continuing 1 gr. opii. every four hours ; patient cheerful and happy ; continues use of beef ess. and crust coffee ; tongue moist. Nov. 9th, 8 A. M., have continued above treatment through the night—patient rested well ; slight sweating when sleeping ; complains some of flatus ; gave 3 gr. carb. soda ; pulse 110, with all other symptoms favorable ; have discontinued use of verat. viride. I would here state that I have emptied the bladder regularly. 5 P. M., saw patient with Drs. Buckley and Charlton ; removed bandage—wound looking healthy ; slight suppuration—healing mostly by first intention ; pulse 120 ; tongue moist ; skin cool. Nov. 10th, 7 A. M., patient has rested well through the night ; pulse 120 ; tongue slightly dry ; has no pain ; have given through the night opii. as usual, with verat. viride every four hours ; patient feels well and cheerful—thinks she has grounds for hope that she will recover ; there is but slight distention of abdomen.

Nov. 12th. Our patient is prospering finely ; thus far everything looks favorable for a recovery. Her pulse, this morning, is 84 ; tongue moist and clean ; the only disagreeable symptom is wind in the bowels. I moved them yesterday, and shall give another injection this morning. I have continued treatment with opii. and verat. viride, the same as at first, also anise-seed tea. I am giving her all the nourishment she will take, in a liquid form.

Nov. 14th. Our patient is still doing well, has no fever, nor any unpleasant symptoms. I have moved the bowels : I used simply an injection of soap-suds, with a little turpentine. She begins to eat toast and some roast potato, with a good supply of beef essence. The wound is looking well. The superior one-half is entirely healed. I have removed one pin and two sutures, shall remove one pin to-day. I have continued treatment same as formerly.

Nov. 17th. Our patient is gaining as fast as could be expected. The wound is healing gradually, the superior one-half is entirely closed, the other is suppurating some. I have removed two of the pins and the three sutures, the others I shall allow to remain for a few days. I am treating her now with opium and quinine, 1 gr. each, every four hours. Her pulse is about 110 per minute, soft ;

tongue clean and good ; skin soft and moist ; and all appearances favorable. We have strong hopes of a recovery ; I am giving her plenty of nourishment.

Nov. 19th. Our patient is gaining as fast as we could hope for —she begins to have an appetite for food. I am continuing treatment with opium and quinine ; the wound is healing slowly. I have not removed the two lower needles, but the stump looks well. I have moved her bowels with injections about every other day, they have moved once without any medicine whatever. I see nothing to hinder a favorable termination.

Nov. 22. DEAR SIR :—Your favor of the 19th was duly received. I will first answer your questions. 1st. There has not been any hemorrhage whatever from the stump or wound. 2d. There has not been any distention of the abdomen at any time of any account, she only complained one day of flatus.

She is now getting along as well as could be asked for : has a good appetite, feels cheerful, and says she wants to sit up. I have removed three of the pins ; I thought it was best to allow the lower one to remain for a few days, yet the stump is about on a level with the abdomen. I am giving her quinine with reduced doses of opium.

February 14th. Both patients have completely recovered from the operation, and are in good health.—*Chicago Med. Examiner.*

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*Clinical Lecture on Rheumatism.* Delivered at St. George's Hospital. By HENRY WM. FULLER, M.D., Physician to the Hospital.

Another class of cases which abound in our wards, and always pass under the name of rheumatism, are those characterized by circumscribed pain and swelling of the periosteum. The patients are always cachetic, and are commonly persons who have suffered from syphilis, or have had their systems saturated by mercury. The periosteal swelling makes its appearance in those parts especially where the bony framework is thinly covered by integument ; and thus nodes, as they are termed, are often found on the tibia, the ulna, the cranium, the clavicle, and the sternum. At the commencement of the disease the affected part becomes swollen, puffy, and tender on pressure ; but after a time the puffiness subsides, and firm, irregular, painful elevations or projections remain, which are exquisitely tender to the touch. So prominent are they in some instances that the eye alone suffices to detect them, and even when this is not the case they may be easily discovered by running the fingers along the bone. They vary in size, as in prominence, roughness of surface, and tenderness ; but they are usually of an inch or an inch and a half in length, sufficiently tender to be a constant source of pain and annoyance, and prominent enough and

rough enough to be detected on the most cursory examination by those who really search for them.

An excellent example of this form of disease has been under your observation in the person of M. W—, aged forty, who was admitted into the Fuller ward on January 11th, 1862. This man had been suffering from pains in the limbs for above eighteen months, and although he positively denied having had syphilis for nearly seven years, his pains were manifestly connected with a venereal taint. He had had sore throat and purulent discharge from the nostrils; and a large, firm, and tender node existed on the right tibia. His complexion was sallow, his tongue was clean, his bowels were regular, and his urine was acid and clear. He had not had a good night's rest for many weeks in consequence of the pain. I gave him the ordinary diet of the hospital, with a pint of porter; and prescribed the following medicines: ten grains of iodide of potassium, and ten drachms of cinchona draught, three times a day. At the same time I kept applied to the painful spot a rag dipped in a lotion composed of five grains of bichloride of mercury, six drachms of compound tincture of iodine, two ounces and a half of glycerine, and five ounces of distilled water. Within ten days the pains were much relieved and the periosteal swelling was subsiding. On the 31st, being quite free from pain, he was permitted to leave the hospital.

Another instance of the same form of disease was admitted at the same time into the Queen's ward, in the person of M. A. P—, a married woman, aged twenty-five. She had contracted the malady in America, and for two years had suffered severely from pains in the limbs, which medical treatment had hitherto failed to relieve. Since she was first attacked she had twice had inflammation of the eyes, and had lost the sight of the right eye, and she had also become deaf—effects which she attributed to the "rheumatism." As a child she had scarlatina, and the year before last the lower extremities were anasarca for a period of three months. On admission to the hospital, she was cachectic in appearance, her complexion was pale, her skin cool, and tongue clean; the bowels were regular; the urine was pale, acid, albuminous, specific gravity 1006. The catamenia had been absent four months, but she was not pregnant. Large tender nodes existed on the scalp and forehead, there was considerable effusion into the capsule of the right knee, and there was opacity of the right cornea over the pupil. The heart's action was regular, and its sounds were clear. I gave her the ordinary diet of the hospital, with a pint of porter; and prescribed the following medicine, namely: ten grains iodide of potassium, two drachms of solution of bichloride of mercury, and ten drachms of cinchona draught, every six hours. On the 17th slight ptyalism was coming on, and therefore the solution of the bichloride of mercury was omitted; the other remedies were continued, and, as she was restless at night, ten grains of Dover's powder were given at bedtime; five ounces of gin were also ordered. Gradually the pains subsided, the nodes disappeared, and she left

the hospital quite free from suffering on the 9th of February, or at the expiration of four weeks from the date of her admission.

Now these two cases are fair examples of this form of disease, of the consequences to which it gives rise, and of the treatment calculated to get rid of it. Wandering pains in the limbs, occasional effusion into the capsules of the joints, inflammation of the eyes, inflammation of the periosteum—leading, if neglected, to disease of the bone beneath—are some of its ordinary effects; whilst deafness, headache, and convulsions resulting from the pressure of nodes formed on the internal table of the skull, are some of its less frequent complications. Its characters, when fully developed, are so strongly marked that you can scarcely fail to recognize them; and when once recognized, the treatment is exceedingly simple. The patient is cachectic, and therefore must be supported; whilst bark, iodide of potassium, and, if necessary, a little biniodide of mercury, are given, to rid the patient of his malady. Perhaps there is no form of disease in which relief is obtained more speedily or more certainly, if due care is taken to sustain the patient's strength during the administration of the remedies. But if the character of the disease be overlooked, so that proper medicines are not prescribed, or if the patient be not properly supported, no form of malady is more intractable. Baths of all kinds, alkalies, colchicum, guaiacum, sulphur, and other so-called anti-rheumatic remedies, are absolutely useless. The pains not only continue unrelieved, but gradually progress from bad to worse, until structural disease of the bone has been set up, and the mischief is probably irremediable. In both the cases which I have brought before you treatment had been had recourse to, at longer or shorter intervals, for a period of eighteen months, and the patients were worse at the expiration of that time than they were at the commencement of the attack; and yet within one month from the first adoption of appropriate treatment they were perfectly free from pain.

In both these cases, and in many others which you have noted under my charge, I have made use of the biniodide of mercury. In the first it was employed as an external application; in the second, as a remedy administered internally. But I would have you remark, that in neither instance did I prescribe the biniodide as such, but formed it extemporaneously by the addition of iodide of potassium to the bichloride of mercury. My object in so doing was to obtain the remedy in a soluble, and therefore in an active form. Biniodide of mercury, as you are doubtless aware, is a scarlet powder, insoluble in water, and, like all other insoluble matters when taken into the stomach, is uncertain in its action. Much larger quantities of it must be administered than would be needed if we could make sure of its being absorbed; and whilst in some instances we fail to obtain the desired results, in others profuse salivation is induced in consequence of a large proportion of the remedy having found its way into the system. But biniodide of mercury is rendered perfectly soluble in water by an excess of iodide of potassium; and thus, whether employed externally or

internally, the certainty and energy of its action are much increased; smaller doses will fulfill the object we have in view, much greater reliance can be placed upon its action, and its operation can be regulated with the greatest nicety. The contrast between its effects in the two forms is so striking and so manifestly in favor of its solution, that I should advise you to adopt this mode of administration whenever you may have need of its assistance.

Another form of so-called rheumatism which you will often be called upon to encounter is that known under the title of "gonorrhœal rheumatism." So common is this form of disease that we are never without one or more examples of it in the wards. But although the opportunities for observations are numerous, the profession have not as yet attained to much certainty in its treatment. In private practice I am often consulted by gentlemen who for months have been taking medicine without relief; and I doubt not that you have seen many patients in this hospital who, after having taken alkalies, iodide of potassium, colchicum, guaiacum, and other anti-rheumatic remedies, and having had a succession of warm baths, hot-air baths, and sulphur-vapor baths, have left the house very little better than at the date of their admission. And is not this fact, and the frequent occurrence of inflammation of the eyes which is observed in the course of this complaint, a cogent argument against its rheumatic origin? My own conviction is that the disease is due to the action of a specific poison, and has nothing in common with rheumatism as typified by rheumatic fever, except pain in the limbs and occasional swelling of the joints. Its origin is manifestly connected with a gleety discharge from the urethra, resulting, as I believe, from some peculiar form of vaginal poison distinct from that which occasions ordinary gonorrhœa. Its course is unlike that of true rheumatism, inasmuch as when it occurs in an acute form it is seldom accompanied by much heat of skin, or furring of the tongue, or loading of the urine; is attended by excessive synovial effusion, is rarely productive of redness of the affected joints, and is never marked by inflammation of the heart; and when it presents itself in a chronic form, it is almost invariably unattended by furring of the tongue or loading of the urine, or by any of the general symptoms which characterize true rheumatism; whilst the local affection as in the acute form, is distinguished by synovial effusion, by its stationary character, and by its obstinate resistance to ordinary treatment. The insufficiency of ordinary remedies is admitted by all, and I am sure I am enunciating the opinion of the profession when I tell you that cases of gonorrhœal rheumatism are amongst the most obstinate we have to deal with. Iodide of potassium, alkalies, guaiacum, colchicum, copaiba, and sarsaparilla, which are the medicines most highly esteemed in such cases, very generally disappoint our expectations; for although the urine be rendered alkaline, although iodism be induced, although colchicum, guaiacum, and copaiba be administered in full and repeated doses, although the patient take sarsaparilla *usque ad nauseam*, the obstinate swell-

ing of the knees, or feet, or wrists continues, and the wandering pains in the limbs torment the patient as before. Sometimes, indeed, the pains will subside under the influence of these remedies, but the frequency with which they continue unchecked has long since satisfied me that in many instances some agent is needed which will exert a more decidedly curative power. This agent, I believe, is to be found in the biniodide of mercury. Provided only the urethral discharge be stopped—and if it be not, measures must be taken immediately to check it—this remedy will almost always effect the object we have in view. The cases in which I have employed this drug in the wards of the hospital are so numerous, that you have all had opportunities of watching its action; but it may be well perhaps to direct your attention to one or two cases in which its effects have been strikingly manifest.

First, let me cite the case of R. C—, aged twenty-one, in Hope ward. He had been attacked with urethral discharge three weeks before admission, and for a fortnight had undergone treatment with relief, when he was suddenly seized with excessive pain and swelling of the left wrist and both knees, and with conjunctivitis of both eyes. In this state he was admitted into the hospital. His complexion was pale; skin warm, not hot; tongue coated; bowels reported open, and urine clear; pulse 96; appetite good. A slight gleet discharge from the urethra still continued.

Now, here was a case in which the articular pain and swelling were severe, and in their character corresponded with what is observed in rheumatic fever, and yet the general symptoms of the case bore no sort of resemblance to those which accompany that form of disease. Not only was there no heat of skin, but the urine was clear, the appetite good, and the conjunctiva, which in true rheumatism is rarely, if ever, affected, was the seat of acute inflammation. No wonder that in these cases the treatment ordinarily pursued for the cure of rheumatism proves inadequate to restrain the progress of the disease! The malady itself is of a specific nature, and requires special treatment. In the example before us, the patient was cachectic, and therefore the ordinary diet of the hospital, with a pint of porter, was given daily; a zinc injection was prescribed with a view of checking the gleet; the eyes were fomented with warm water; and the following medicine was administered three times daily, viz: solution of bichloride of mercury, two drachms; iodide of potassium, half a scruple; cinchona draught, ten drachms. This treatment was commenced on the 20th of June, and by the 30th the inflammation of the eyes had disappeared, and the swelling in the joints had greatly subsided. The medicine therefore was continued as before; the pain and swelling decreased daily; and on the 6th of July, as there was no longer any pain, the patient was permitted to leave the hospital.

The case of A..T—, aged twenty-two, admitted on the 18th of June into the Fuller ward, was of the same character. This man was attacked with gonorrhœa two months before admission,

and had suffered severely from pain in the limbs and joints above six weeks, and from conjunctivitis of the right eye one week ; and although he had been under medical treatment, he had not received the slightest relief. His skin was natural, urine clear and tongue clean, his bowels were regular, his pulse was 96, and his appetite was indifferent. There was severe pain, but no swelling, in most of the larger joints, and the inflammation of the right eye caused so much suffering that it prevented his sleeping at night. Fish and beef-tea were ordered for his diet, a blister was applied behind the right ear, and the following draught was given three times daily, viz : iodide of potassium, six grains ; solution of bichloride of mercury, one drachm and a half; nitrate of potass, one scruple ; cinchona draught, ten drachms and a half. Within five days the eye was much relieved, and the appetite had improved ; and as the skin still continued cool and the urine clear, I ordered him to take meat and a pint of porter for his dinner. On the 4th of July he was able to discard his eye-shade ; and on the 9th, as he had no longer any pain in the limbs, he was permitted to leave the hospital.

These two cases are fair examples of the result of this treatment when it is commenced within a reasonable time after the accession of articular mischief ; and those of you who have watched my practice in the wards are aware that I seldom have a recent case of so-called gonorrhœal rheumatism under my charge above a fortnight or three weeks. But when this disease has been improperly managed, and has run on for a period of many months, it is apt to produce thickening and stiffness of the ligamentous and other structures around the joints, especially around the ankles. This chronic thickening and pain may induce permanent disability of the joints ; and as internal remedies are here of little avail, and ordinary lotions and embrocations are also of little service, I will call your attention to the only mode of treatment which I have found productive of real benefit. I will illustrate it by reference to the case of J. M'G——, aged twenty-one, who was admitted into the Fuller ward on the 25th of July. This man had an attack of gonorrhœa eight months prior to his admission to the hospital, followed in the course of ten days by pain and swelling of several of the larger joints and especially of the feet and ankles. He underwent treatment with partial relief, but had never got rid of the pain and swelling of the ankles, although blisters had been applied and a variety of lotions and embrocations had been employed. At the date of his admission his ankles were both swollen, the structures external to the joint being much thickened ; they were not tender on pressure, but were so painful on motion that he could scarcely walk across the ward even with the aid of two sticks. His general health was good, his functions were properly performed, and he had no pain in any other limb or joint. He had a thick discharge from the urethra, which had made its appearance from time to time ever since the attack of gonorrhœa.

Now this case is a type of many which will come before you in

practice, and I would have you look closely into its history. What think you were the indications for treatment? The urethral discharge was an abnormal feature requiring local treatment to repress it, and a zinc injection which was ordered for that purpose effected its object in less than a fortnight. But what indications were there for general treatment—for the administration of medicine? Assuredly none. The man's health was good, his appetite excellent, his functions were regularly performed, his secretions were natural, his pulse was quiet, and there were no wandering pains in the limbs or other evidences of a poisoned condition of the blood. Accordingly I abstained from the administration of medicine internally, and addressed myself to the relief of his feet and ankles by external means. I gave directions that a cold douche should be applied to these parts daily for the space of ten minutes, or until he could bear the shock of the water no longer, and that then without previously wiping or drying the feet, active friction should be made use of until warmth had returned to them. This active heavy rubbing was continued for about twenty minutes on each foot and ankle daily. When it was concluded, and the circulation in the part was thoroughly re-established, the feet and ankles were enveloped in lint steeped in the following lotion, namely: compound tincture of iodine, half an ounce; glycerine, two ounces and a half; water, three ounces. The lint was then covered with flannel, and was kept on the part until the following morning, when the douche and friction were made use of as before, and then the lotion was reapplied. The result, as you have seen in many other cases, was that within a few days he was enabled to discard his sticks, and he left the hospital on the 22d of August free from pain and walking comfortably. In many instances of the same kind, in which patients have been admitted with the structures around the knees thickened and with chronic effusion into the capsules of the joints, I have often employed the same treatment successfully, the only variation being the use of a bandage, firmly applied over the lotion-steeped lint, instead of a simple piece of flannel—the support which the bandage gives in these cases being favorable to absorption of the synovial fluid.

Before quitting this subject, I would make a few remarks respecting this method of treating chronic thickening of the joints. It is not the mode of treatment usually employed, but it is eminently successful, as those of you who have watched my practice can testify. Case after case has come before you in the wards in which persons who have been suffering many weeks, or even months, from thickening and stiffness of some of the larger joints, and thereby have been incapacitated for work, have recovered the use of their limbs, and have left the hospital after a few weeks of this treatment. This, too, has happened in the instance of many patients who, prior to admission, have had their joints blistered, painted with iodine, and otherwise treated without relief. In truth, it has always appeared to me that the ordinary mode of employing iodine in

these cases is wrong in principle, and often useless in practice. The compound tincture of iodine is the preparation commonly employed, and it is painted over the affected part under the idea that it will act as an absorbent. But when used in this manner, it dries in a few minutes, and destroys the cuticle after two or three applications. In some instances, it may be useful as an escharotic; and, in others, it may prove serviceable as a mild counter-irritant; but it is repugnant to common sense to suppose that when applied in this manner it can exert a distinctly absorbent influence. Further, by destroying the cuticle, it soon creates a bar against its own employment, and utterly precludes the use of friction and other measures which may be deemed likely to be productive of relief. The method which I adopt has no such drawbacks. It does not lead to destruction of the cuticle; it does not even produce cutaneous irritation, unless the lint be covered with oiled silk or gutta-percha, in which case a crop of pustules will make their appearance within forty-eight hours; it insures a constant absorption of iodine, and a constant stimulus therefore to the removal of the effused fluid; it admits of the application of the douche and friction—two of our most potent auxiliaries for stimulating the local circulation and getting rid of chronic thickening around the joints; and it effects the object in view more rapidly and more certainly than any plan of treatment with which I am acquainted. The formula which was employed in this case contains as much iodine as the skin will bear without suffering, and the glycerine in the lotion prevents the drying of the lint, and does away with the necessity for wetting it more frequently than once in twenty-four hours. The patient is thus saved unnecessary trouble, and the pain and irritation resulting from the destruction of the cuticle are avoided.—*Lancet*, Jan. 31, 1863.

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*The Treatment of Epilepsy by Belladonna.* By Dr. J. S. RAMSKILL, Assistant-Physician to the London Hospital, and Physician to the Hospital for Epilepsy and Paralysis.

Concerning the treatment by, and action, of belladonna in epilepsy, I will give you, in a short compass, the results of my experience in its use. First, you must not always, nor even usually, look for immediate and palpable beneficial results. The number of fits at first may not lessen in equal times; very frequently, the reverse obtains; and you may expect, for three or four weeks after commencing it, even in the most appropriate cases, a complaint that the patient gets worse; but after six or eight weeks, if any amelioration occur, it will be decided and progressive. At first the dose should be very small, and gradually augmented until the pupil shows signs of its action, and the patient

complains of both alteration in sight and dryness of throat. Having obtained this result, and maintained it for some weeks, the dose may be gradually diminished ; but its effect on the eye and throat are not to be so diminished as to become imperceptible to the patient, but only so far lessened as to cease causing absolute discomfort. The other toxic effects of belladonna are wholly uncalled for. Patients vary greatly, both as to susceptibility in the action of the drug, and in other respects. The annoyance as to dry throat and disturbed vision, which, at the expiration of a month, may be said to be unendurable, will now and then cease, the dose being the same, or even slightly increased ; but I may remark, these cases always improve most rapidly. I prefer to give the drug in an eighth of a grain dose three times, or only twice, daily, for a week ; then a quarter of a grain for fourteen days ; a third for the next fourteen days, at which time its physiological action will in most cases be manifest. I think it wise to halt at this dose for two months or three months, slightly increasing the dose if the patient shows diminished susceptibility to its influence, decreasing it if the reverse happens, and then gradually dropping it to the quantity first administered. I have given as much as four grains for a dose, but very rarely. I think it imperative to say, that I have never been able to give in epilepsy the large doses which Dr. Fuller has succeeded in administering in other diseases of a convulsive character. In this remark I am supported by the authority of my colleague, Dr. Brown-Séquard, who has arrived at the same conclusion. One objection to the use of belladonna, when you cannot see your patient at regular intervals, arises from its uncertainty of strength and corresponding difference of action. To those who wish to use a preparation of uniform strength, having similar, and, in some cases, improved properties of belladonna, the salts of atropia are now easily procurable. The best of these is the valeriant of atropia ; the commencing dose a-hundred-and-twentieth of a grain. Hitherto, I have preferred belladonna, having had a strong desire to find what it could and, if possible, what it could not accomplish in the treatment of epilepsy. It is right to say, there are different methods of administering belladonna. Rousseau gives a centigramme of the extract and an equal quantity of the powder of belladonna for the first month, in the evening of each day. He gives it at this time because of the frequent nocturnal character of epilepsy, and partly because of the disagreeable effect on the sight and throat during its early administration. During the second month, he gives two such pills at the same time, and during the third month, three pills. If, at the end of six or nine months, the frequency of the fits is decreased, he increases the dose. He asserts that, of 120 patients, he has cured twenty. A most important question now arises,—Do we know any thing of the nature of the action of belladonna beyond the empirical results obtained in treatment ? If a drop of solution of belladonna or atropine be dropped on the foot of a frog

properly prepared, and fixed on the field of a microscope, the blood-vessels will be seen to contract, and they will remain in this condition for a considerable time. For comparing the action of opium, a solution of the latter, similarly prepared, was applied to another part, and the vessels were immediately dilated. Now, belladonna, internally administered in medicinal doses, causes, first, dilatation of the pupil, with dimness of vision; secondly, dryness of throat and difficulty of swallowing; thirdly, increased tone of involuntary muscle; fourthly, it relaxes the bowels, and cures incontinence of urine, arising from weak sphincter vesicæ. As dilatation of pupil is one of the earliest phenomena, let us see if we can account for it. There are two sets of fibres in the iris. It is well known that the sympathetic is the motor nerve of the external longitudinal fibres of the iris, which radiate from the centre to the circumference. The branch of nerves supplying these fibres comes from the cervical ganglia of the sympathetic. Excitation of this nerve, from any cause, will cause a contraction of these longitudinal fibres, and a corresponding dilatation of pupil. There is also a circular set of fibres immediately surrounding the margin of the pupil. This set is under cerebral control; that is to say, its motor supply comes from a branch of the third nerve. Any irritation in the brain or along the trunk of the nerve, or an excitation by light on the retina acting in a reflex manner, will stimulate this branch of the third to act, and cause contraction of pupil.

But we may have dilatation of pupil without increased action of the sympathetic; it may be acting normally, then the third nerve must be supposed deficient in power. This is a common result observed in compression of brain. On the other hand, contraction of pupil may be present without abnormal activity of the third being necessarily supposed. This condition is invariably produced by section of the sympathetic in the neck. Dilatation of pupil may, in short, depend upon the action of the sympathetic being in excess, or in diminished power of the cerebral nerve. In epilepsy it is easy to observe, from collateral symptoms and the general condition of the patient, that dilated pupil, when it exists, which is much rarer than a normal condition, is usually caused by an active sympathetic overpowering the third nerve. The same dilatation may be observed in most convalescents after acute disease, and in most affections involving extreme debility; but here it would be more correct to say, that the dilatation was rather the effect of a compressed condition of the third cerebral nerve accompanying a normal sympathetic, than of an active sympathetic accompanying a normal condition of the cerebral nerve. I have said the branches of the sympathetic nerve which go to the iris, come from the cervical sympathetic. Dr. A. Walker, with Professor Budge, have made experiments, which seem to prove that the nerve fibres of the cervical sympathetic, which go to the iris, originate from the spinal cord between the sixth cervical and the fourth dorsal vertebræ. Dr. Brown-Séquard has ascertained that the

origins of the fibres of the sympathetic going to the iris are still more extended. I have mentioned that division of the cervical sympathetic allows the uncontrolled third cerebral nerve to contract the iris. Dr. Brown-Séquard has shown that a section of the spinal cord, as high as the level of the fifth cervical, or as low as the ninth or tenth dorsal vertebræ, affects the iris in the same manner, but in a less degree than section of the sympathetic. On the other hand, Schiff has shown that some of the fibres animating the iris ascend the cervical part of the spinal cord, and most probably go up to the medulla. I may also say here, that the sympathetic is the motor nerve of the blood-vessels, supplying various parts of the head. It is especially interesting to know the origin of these vaso-motor nerves, especially in relation to loss of consciousness, the initial movement of a fit of epilepsy, and also in regard to the pathology of the *petit-mal*, as well as the great light such knowledge would throw on the action of belladonna in epilepsy. Dr. Brown-Séquard discovered some years ago that the motor nerves of the blood-vessels going to various parts of the head, come out chiefly from the spinal cord by the roots of the last cervical and first and second dorsal nerves. He thinks, however, their real place of origin to be partly the spinal cord, partly the higher portions of the encephalon, but chiefly the medulla oblongata and the neighboring parts of the encephalon. In the case of R. P., it will be remembered the ferrum candens was applied to each side of the spine, opposite the last cervical and first dorsal vertebræ. The reason will now be apparent. The vaso-motor nerve fibres are able to contract the blood-vessels directly, when excited. We hope, by frequently cauterizing the tissues opposite the seat of exit of these nerves from the spine, to effect some change in the nutrition of the parts to which these nerves are distributed. We can now understand the nature of the action of belladonna in producing dilatation of the pupil; and from its effect on the iris, we can deduce a strong probability of the nature of its action in epilepsy. It is a stimulant to the sympathetic, the motor nerve of the blood-vessels, and it is only on this supposition we can account for the other physiological effects of the drug.

I would add, although experience shows belladonna is one of the most powerful contractors of the blood-vessels of the spinal cord and its membranes, it has a comparatively feeble action on those of the brain. I speak of its administration in medicine—not in poisonous or fatal doses. Hence arises its extraordinary adaptability in epilepsy, where we have dilatations of vessels or turgescence in the medulla and its neighborhood; of its still more marked efficacy in inflammation, and congestion of the spinal cord and its membranes; as well as of its comparative inutility (administered alone) in those cases of morbid activity of brain, connected, as we think, with more or less congestion of gray matter, in some forms of incipient insanity, associated with sleeplessness and suicidal tendency, as well as in some other cerebral diseases.—*Medical Times and Gazette.*

*Gun-shot Wound of the Hip, upon which supervened Pyæmia—  
Rupture of the Liver, &c. By LEWIS HEARD, M.D., Acting  
Ass't Surgeon, U. S. A.*

[From the Boston Medical and Surgical Journal.]

Thomas McGowan, aged 26 years, by occupation a blacksmith, a private in Co. H, 121st Regt., N. Y. Vols ; of dark complexion, black hair, dark eyes; temperate habits, except excessive use of tobacco ; came into Finley General Hospital May 8th, 1863, with gun-shot wound of the left hip, received the 3d of the same month, in the battle of Chancellorsville, Virginia. He was placed in the first ward, under the care of Dr. Logan.

On examination, the ball (a Minié) was found to have entered at a point near the anterior inferior spinous process of the ileum, and taking a direction backwards, had been cut out very near the posterior inferior spinous process of the same bone, having passed close to the upper edge of the acetabulum and ischiatic notch.

No hæmorrhage. Complained of pain in the hip and thigh, with inability to use them ; pulse 90, of good strength ; slight febrile excitement, moderate heat of surface ; some degree of redness and swelling about the wounds, but little discharge. Bowels constipated ; tongue very slightly coated ; appetite impaired. He was placed in as easy a recumbent posture as possible, water dressings applied, and an opiate given at night.

May 10th.—During yesterday had less feverishness and pain. To have good hospital diet, except meat. Continue the water dressings, and to relieve the bowels, Ol. ricini 3 i. was ordered to be given in the evening. Pulse 80, full and of fair strength ; thirst and heat less. Bowels well evacuated this morning from the oil.

May 18th.—The treatment for the last seven or eight days consisted in an occasional laxative of olecum ricini, to keep the bowels soluble, and opiates given *pro re nata*, to procure rest and sleep ; the water dressings assiduously employed, and wounds kept clean.

At this time slight chilliness being complained of, and the pulse becoming somewhat accelerated and of less resistance, with other symptoms of depression of the nerve power supervening, quinine, in doses of three grains, was prescribed and directed to be repeated every six hours. Milk punch, beef tea, chicken broth, and other nutritious articles of diet to be given, an aperient every third or fourth day to secure a proper state of the bowels, and a dose of morphine at bed time. Local treatment as before.

25th.—The above remedial management has been pursued since last date, but no material change in the condition of the patient has taken place, except the chilliness has in a great measure subsided, and he suffers less pain in the limb, and there is some improvement of the appetite. Tinct. ferri chloridi gtt. xij. to be given every six hours, alternating with the sulph. quinine. The

same nutritious diet was continued, with a moderate use of wine. No change of dressings. The posterior wound has now healed. Discharge from the anterior one free and of healthy character.

31st.—Up to this period there has been no change of treatment, as the patient gave evident manifestations of gradual improvement from it; is quite easy when perfectly at rest. Cannot, however, be moved without severe pain, and even complains of suffering from the jarring of the floor by heavy walking over it.

At this time, Dr. Logan having been taken ill, the patient came under the care of Dr. Walter, who gave unremitting attention to him till the case terminated in death.

June 1st.—At about 10 o'clock last night, he was taken with a severe rigor which lasted half an hour, when moderate reaction ensued, and at the end of an hour more, copious perspiration broke out, accompanied with considerable tremulousness of the hands. This morning he is still perspiring; pulse 130, soft, and rather small; tongue dry and brown; some thirst; seems cheerful, and expresses hope of recovery. Rx. Quiniæ sulph., 3 ss.; acidi sulph. aromat., 3 i.; tinct. ferri chloridi, 3 ij.; aq. font., 3 ij. Misce fiat mist. Dose, a teaspoonful every two hours. Diet, milk punch, etc., as heretofore.

2d.—Patient continued comparatively comfortable through the afternoon of yesterday, but at about 10 o'clock in the evening, another severe chill occurred, of about the same duration as the first, and followed by the same train of morbid phenomena. On the morning visit was still perspiring; pulse 125, small, and non-resisting; tongue dry; moderate thirst; tremor of hands the same; is rather talkative, and expresses strong hopes of recovery. Rx. Ext. valerian. fluidi, 3 ij.; carb. ammon., 3 ij.; glycerini, 3 i. M. ft. mist. A teaspoonful to be taken every three hours. Gave also, in addition to what he had been taking, quinine in doses of gr. v. ter in die. Made but little complaint through the day. Diet the same; no change of dressings.

3d.—Passed the night without chill; was somewhat delirious, however, with sleep disturbed; skin of natural temperature; pulse 135, of reduced force; tongue still brown and dry; persists in chewing his tobacco, the power of habit being so great. Has, for some days, had one healthy alvine evacuation every twenty-four hours. Tremor of hands and arms rather increased than otherwise. Seems to require an effort to speak.

At 12, M., was seized with another severe rigor; pale and cadaverous expression of countenance; pulse more frequent and very small; and in half an hour from the commencement of the chill he died, evidently from the extent and severity of the internal congestion.

*Autopsy*—Eighteen hours after death.

Body but little emaciated; the thigh of wounded side at least one-third larger than the other.

*Thorax*.—Very little effusion into the left pleural cavity; quite

extensive old pleuritic adhesions ; lungs considerably congested, but not the least appearance of consolidation. No tubercles nor metastatic abscesses to be found. Heart normal.

*Abdomen*.—Vessels of the peritoneal covering of the intestines much injected. No effusion into the cavity of the abdomen. Liver enlarged to one-third beyond its natural size ; of healthy appearance on its convex surface ; but on raising it and exposing the concave side there was observed a rupture commencing on the posterior edge of the right lobe, some three inches from the apex, and extending transversely to the left three or four inches, and penetrating to the depth of, at least, a quarter of an inch, if not more, at the edge of this organ. A portion of the liver, not far from three and a half or four inches in diameter, through the centre of which passed the rupture, was of a very dark color—nearly black ; soft, and easily broken down under slight pressure of the fingers, with hardly sufficient cohesiveness to sustain its own weight. It seemed disorganized—gangrenous. On making incisions into this diseased part, there issued a dark, ichorous-looking fluid, not unlike that which is discharged from certain soft structures in a state of gangrene. No abscess was found in any part of the liver. The gall-bladder contained two or three drachms of dark-colored bile.

The spleen was very much congested, and enlarged to twice its ordinary normal size, and presented the appearance of having been denuded of the peritoneum ; was of unusually dark color, and so softened as to almost fall to pieces on being handled.

Other abdominal organs healthy.

On laying open the track the ball had taken, by cutting across the gluteal muscles, several ounces of pus were discharged, which had burrowed about the hip-joint and ischiatic notch. The ball had passed so near to the upper edge of the acetabulum, as to wound the capsule and open the joint ; the cotyloid ligament and the cartilaginous covering of the head of the femur were corroded and rough to the feel. No further examination of the limb was made.

*Remarks*.—May not this case be considered one of pyæmia, though not sufficiently far advanced for the formation of metastatic abscesses, the sudden violent congestion having taken off the patient before the proper stage had arrived for these deposits ?

It would have been interesting to have examined the condition of the veins, to ascertain whether there existed suppurative phlebitis or not, but there was not sufficient time given for this purpose, and it was not done.

How much the rupture of the liver and the gangrenous condition of a portion of its structure had to do with the sudden termination of the case, is a question which cannot well be determined ; there can, however, be but little doubt that these, together with excessive congestion, constitute the immediate cause of death.

I have frequently witnessed great enlargement of the spleen, but do not remember to have seen a case presenting the same ap-

pearance and condition of this one ; the rough and abraded surface is not common.

It is possible the patient may have been suffering under the deleterious influence of the malarious poison, though no manifestations of this had been observed till a few days previous to his death ; and the symptoms then presented, were those common to both pyæmia and intermittent fever ; and besides this, there has been no miasmatic disease, of any kind, in the Hospital for a long time, as I can learn ; but we have recently had a number of cases of pyæmia, some of erysipelas, and one of hospital gangrene.

Finley Hospital, Washington, D. C., June 10, 1863.

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*On Artificial Dilatation of the Os and Cervix Uteri by Fluid Pressure from above : A Reply to Drs. Keiller of Edinburgh, and Arnott and Barnes of London.* By HORATIO S. STORER, M.D., of Boston, Surgeon to the Pleasant St. Hospital for Women. Read before the Suffolk District Medical Society, May 30th, 1863.

[From the Boston Medical and Surgical Journal.]

Those who are interested in obstetric surgery can hardly have failed to notice a controversy, for many months past carried on through the more important British journals, involving the question of priority as to suggestion and practical application in a matter of much importance—namely, the dilatation of the cervix uteri *from above*, as a means of diagnosis and treatment.

As one of the original claimants of the suggestion referred to, and, as I supposed, till within a few weeks, the only one with any legitimate ground for such claim, I have felt some little interest in the result. Not caring, however, again to enter the controversial arena, I should continue to remain a passive spectator, did not a more careful examination of the whole matter, to which I have been led by some recent allegations, compel me to break silence in simple justice to one of my opponents. It will be found, also, that this communication will not be without its value as bearing upon and instancing the law which should govern physicians, as all other scientific men, in the settlement of similar disputes.

Immediately on entering practice, it became evident to me that the great field for advance in obstetric therapeutics was *the interior* of the uterus—an opinion that was daily strengthened during the intimate relations to which I was admitted by Prof. Simpson in 1854-55.

At that time the sole means, at all safe and reliable, of directly reaching the interior of the unimpregnated uterus, was by the use of expandible tents, then only made of sponge, first suggested for

this purpose by Simpson in 1844.\* It is true, that for the induction of premature labor, for which the method to be considered was first proposed to the profession by both Dr. Keiller and myself, and for which its use is now urged by such competent authority abroad, there had been many measures suggested and practised—all of them, however, acting either secondarily or by reflex action, as do galvanism, mammary irritation, puncture of the membranes, their separation from the uterus by bougies, the injection of water or air, an agent here so dangerous, or by the uterine sound, and also, there seems to me good reason for believing, the so called oxytoxics, as ergot of rye; or by a stimulating or dilating force applied and first acting from below.

These remarks apply with equal force to all methods that had then been proposed—to those of Hamilton and Hopkins; to the inflexible catheter left in the cavity of the uterus by Merrem, Krause and Simpson; to the vaginal and cervical plugs and dilators of Brünningshausen, Osiander, Von Busch, Hüter, Gariel and Braun; to the carbonic-acid douche, suggested by Brown-Séquard and so fatal in the hands of Scanzioni and others; and to the water douches, of Kiwisch, applied to the vagina, and of Schweigaüser and Cohen, to the uterine cavity. These several means, while they were applicable but partially and with varying success to the pregnant uterus, were wholly unfitted, with the exception of sponge tents, for opening up that which already contained no foetus; and for this the elastic bougies of McIntosh and the unyielding ones of Simpson, the spring-knife of the latter, the hollow tubes used by Wakley for urethral stricture and adopted from him by Baker Brown, and the instruments of Rigby, Graham Weir, Osiander, Busch, Krause and Jobert, with expanding metallic blades, are either insufficient or attended with too much hazard.

Caoutchouc bags or sacs, distended with air, had been proposed some years previously by Gariel,† for the treatment of displacements of the uterus by pressure from below, and for plugging the vagina in cases of haemorrhage. He had also suggested their possible introduction into the cervix, not, however, through it, for the purpose of overcoming stricture of that canal, and had even asked, "if this property of the bulbous air sound could not be turned to advantageous use in inducing premature labor?" here referring, however, to their use in the vagina, as had already been suggested by Hüter and Braun. The proposals of Gariel, however, like those of Braun, were attended with singularly unfortunate results, Breit and others reporting a mortality of six patients out of fourteen,‡

To sponge tents applied to the cervix there attaches, as I have already intimated, various important objections. They are readily acted upon chemically by the uterine and vaginal secretions, and

\* Edinburgh Monthly Journal of Medical Science, Aug. 1844, p. 734. Obstetric Works, Vol. i., p. 125, Scotch edition; p. 128, American do.

† Gazette des Hopitaux, 1849, No. 141.

‡ Goschen's Deutsche Klinik, Berlin, 1853.

from their organic character quickly undergo putrefactive decomposition, subjecting the patient to a certain amount of risk from such possible absorption as is hereby implied. They act at times with great rapidity and force, and where the tissues are morbidly friable, if not very carefully made, they may produce unintentional or dangerous tension and laceration.

From direct experience of these several dangers, it became my aim to find, if possible, a substitute for sponge in the dilatation of the cervix, and in May, 1855, in a paper read before the Medico-Chirurgical Society of Edinburgh, I proposed the use of tents prepared from the bark of our indigenous slippery elm.\* Shortly after, during the publication of Dr. Simpson's Memoirs, I had again occasion to refer to the disadvantage of sponge under certain circumstances,† and at still greater length in a paper presented during the fall of the same year.‡

The use of elm tents in my own hands and those of others who have communicated with me upon the subject, proved the agent greatly superior to sponge in those cases where a slow and moderate action is desired, as, for instance, in mechanical dysmenorrhœa and certain forms of sterility; and as yet I know of nothing that will here better answer the indication, although during the course of my experiments in this direction I have tried a variety of other substances, as althea root, etc., among them the root of gentian, afterwards made the basis of a memoir upon mucilaginous tents by an English Surgeon, Dr. Aveling, of Sheffield,§ in apparent ignorance of his having been anticipated by my suggestion of three years before.

Steadily pursuing these efforts towards the solution of the interesting problem proposed, I again called the attention of the profession to its importance by a paper published in Philadelphia early in 1859, in which were pointed out the several indications for artificial dilatation of the cervix uteri, and the several dangers attaching thereto, alike in the induction of premature labor, the assistance of the progress of accidental abortion and of labor at the full time, the exposure of the uterine cavity for the purposes of diagnosis and treatment, both in diseases puerperal and non-puerperal.||

During the preparation of this paper, duly appreciating, as will be apparent from its perusal, the actual and relative value in the assistance or induction of labor, of the several elements of action involved—namely, dilatation of the cervical canal, detachment of

\* Association Med. Journal, London, May, 1855, p. 446; Glasgow Med. Journal, April, 1856, p. 116; Braithwaite's Retrospect, Jan., 1857, p. 247, &c.

† Preface to Simpson's Obstetric Works, Sept., 1855, p. 16.

‡ This Journal, Nov., 1855; Gardner, Causes and Treatment of Sterility, 1856, p. 148.

§ Medical Times and Gazette, June, 1858, p. 653.

|| "The Use and Abuse of Uterine Tents." American Journal of the Med. Sciences, Jan., 1859, p. 57.

the membranes from the walls of the uterus, and the prolonged preservation intact of the bag of waters—I had frequent conversations upon the subject with my friend Dr. Nathan Hayward, of Roxbury, now Surgeon of the 20th Mass. Regiment, and at that time associated with me in the conduct of the Eustis St. Dispensary. With his assistance, I contrived an instrument designed to combine the various indications just referred to, and this was used in practice upon the first favorable case that presented itself to us, on April 13th, 1859. The operation was entirely successful; labor was prematurely induced at the eighth month in a woman who had four times previously undergone craniotomy, and a living male child was delivered. The case was the more interesting to us from the fact that both Dr. Hayward and myself were present at her last confinement; I had turned and delivered the trunk, but it was found absolutely necessary to lessen the head from below before it could be made to pass.

The proposal of the measure now resorted to, as I supposed, for the first time, was made at considerable length under the name of "the uterine dilator," and the case reported in July, 1859.\* I then stated that the instrument, introduced within the cavity of the uterus, produced its action in a threefold manner: "reflexively, as a foreign body; reflexively and directly, by separating the membranes from the uterine walls; and directly, as a fluid wedge, by dilating the os; in each of these three respects, its effect being in proportion to the amount of distension applied. It should be noticed that this dilatation," I also added, "is *from above downwards*, while the tent dilates from below upwards."† I referred to the similarity of this instrument to one suggested for the female urethra by Spencer Wells, of London, some months previously,‡ which in its turn had been taken from a modification by Thompson of James Arnott's urethral dilator, so forcibly brought forward as long back as 1818, both by himself§ and his brother Neil,|| and shortly after by Ducamp in a memoir that received much approbation from the French Academy. I mentioned, also, the curious fact in the history of the various means that have been proposed for dilatation of the uterus, that they have all, without exception, been based, directly or indirectly, upon some method previously in use for the treatment of strictures of the male urethra.

I have thus plainly stated my own position in relation to the plan of dilating the uterus by fluid pressure acting from above, and have shown the gradual and successive steps by which I arrived at the idea and its development. The medium employed for dilat-

\* Am. Jour. of the Med. Sciences, July, 1859, p. 107; North. Am. Med.-Chir. Review, July, 1859; Essay on Criminal Abortion in America, Phila. 1860, p. 69.

† Loc. Cit., p. 112.

‡ Medical Times and Gazette, July, 1858, p. 84.

§ Treatise on Urethral Stricture, &c., &c.

|| Elements of Physics, p. 582.

ting my sac was water; to the dangers of air used for this purpose, as it has been by others who have taken part in this controversy, I then called attention, as I shall again do in the course of the present communication.

Now as to opposing claims, which I shall endeavor to state as fairly, even at my own expense.

In March, 1859, some six weeks earlier than the date upon which my own patient was confined, Dr. Alexander Keiller, of Edinburgh, a gentleman of great obstetric knowledge and skill, and to whose ingenuity in another matter, the suggestion and application of the vaginal stethoscope, I chanced to call attention in the very paper containing the description of my own dilator—having independently conceived of the same idea, put it into successful practice in the presence and with the assistance of our mutual friend, Dr. Graham Weir. The case was immediately reported to the Obstetrical Society of Edinburgh, and was mentioned by Dr. Keiller in conversation and at his lectures, but strangely enough none of the details were put in print until the publication of a summary of the Society's Records, on the very day of my own paper, namely, the 1st of July, 1859.\* This was a brief abstract of Dr. Keiller's remarks, by the Secretary ; his own first publication upon the subject, with the exception of three short and bitter controversial notes,† in the latter of which he did indeed quote from the Proceedings of the Obstetrical Society already referred to, was not till a period of four years afterwards,‡ although the profession had on more than one occasion been promised an immediate communication.

On April 16th, 1859, just three days after my own application of dilatation by fluid pressure from above to actual practice, Mr. Jardine Murray, of Brighton, England, a former Resident Surgeon at both the Royal Infirmary and Maternity Hospital of Edinburgh, introduced an India-rubber air pessary, a in case of hæmorrhage from placenta praevia, into the cavity of the uterus, with the double intention of thus controlling the hæmorrhage and of effecting dilatation of the os. Mr. Murray very honorably acknowledged his obligation for the idea to his former instructor, Dr. Keiller, by whom, however, he was bitterly assailed in the letters above referred to ; and his case is undoubtedly entitled to its claim of being the first of the kind put on record by publication, and the first in which the dilator seems to have been used as an intra-uterine plug for arresting hæmorrhage. This publication was in June,§ a fortnight before either my own views or those of Dr. Keiller appeared in print.

\* Edinburgh Med. Journal, July, 1859, p. 84.

† Med. Times and Gaz., June 18, 1859, p. 639; Ibid., July, 1859, pp. 24, 75.

‡ Read before the Obstetrical Society of Edinburgh, Aug. 6th, 1862; abstract from the Society's Records printed in Edinburgh Med. Jour., February, 1863, p. 763, and the paper itself in the same Journal, March, 1863 p. 782.

§ Med. Times and Gazette, June 11th, 1859, p. 506.

In April, 1861, Dr. Robert Barnes, of London, well known for his contributions to obstetric literature, brought the subject we are considering before the Obstetrical Society of London,\* his first application of the method to practice having been with a case of *placenta prævia*, in April, 1860, just a year subsequently to those of Dr. Keiller and myself. His paper was received with marked attention, and the discussion which followed is well worthy of general perusal. Dr. Barnes discarded, as I had already insisted should be done, the use of air for purposes of uterine dilatation, and claimed, as I had done, that water was the only allowable medium—going on to assert that by this means “the practitioner was enabled to deliver almost at will, not only on a fixed day, but at a predetermined hour; a power that gives us control over cases of convulsions, obstinate vomiting, exhaustion from disease or haemorrhage, much needed and not hitherto possessed.”†

In a subsequent paper, a year later, upon “the new method of inducing premature labor at a predetermined hour,” Dr. Barnes seems more decidedly to claim the proposal as originally his own,‡ whereas, in fact, he but modified the shape of the dilating sac, making it “fiddle-shaped,” so as to act both from above and below, a nicety that in practical application possesses little or no advantage over the original form.

Finally, during the last month,§ there appeared a communication from Dr. James Arnott, of London—to whose celebrity in former years for his various applications of fluid pressure and congelation to medical and surgical practice, I have already alluded—calling our attention, by name, to what he considers forgetfulness or intentional omission. The article to which I now refer is nearly identical with a letter by the same gentleman,|| shortly after our first proposals in 1859.

It will have been noticed that in my own first communication, I acknowledged the fact that the instrument then proposed, like that suggested for the female urethra by Spencer Wells, was really based upon Arnott’s dilator for the male.¶ Dr. Keiller, in his paper of March last, allows that his own conception of the idea was from the instrument of Mr. Wells,\*\* and Dr. Barnes also acknowledges that the original suggestion of fluid pressure for purposes of dilatation was by Arnott.\* \* \* So far as I can ascertain,

\* Transactions of the Obstetrical Society of London, Vol. iii., 1862, p. 107.

† Medical Times and Gazette, April, 1861, p. 456.

‡ Ed. Med. Journal, July, 1862. It is to this paper that the profession are probably indebted for the actual publication of Dr. Keiller’s views upon the subject, some nine months later, they being professedly in answer to Dr. Barnes’ claim.

§ Ibid., April, 1863, p. 968.

|| Med. Times and Gazette, July, 1859, p. 69.

¶ Am. Journal of the Medical Sciences, July, 1859, p. 108.

\*\* Ed. Medical Journal, March, 1863, p. 784.

\* \* \* Trans. of Obst. Soc. of London, Vol. iii., 1862, p. 120.

however, though Arnott in the various publications to which he has lately referred did recognize the real action of the fluid wedge, by which the distended membranes produce dilatation in labor, his application of the theory was to the os *from below*, or in the course of the cervix, if this canal remained uneffaced, and not *from above it*; an operation of entirely different nature, based upon an entirely different principle, and no more to be claimed by Arnott than those of Braun and Brünninghausen.

Having thus stated all the facts in the case, it will be seen that, putting aside the measures of Hüter and Braun for inducing premature labor by dilatation of the vagina as entirely foreign to the subject, it is to Arnott and Gariel that belongs the credit of first suggesting the possibility of dilating the cervix uteri by fluid pressure directly applied to that canal, in these instances from below; that in dilating the uterus by fluid pressure from above, although my instrument was already prepared for the purpose, Keiller really anticipated me by a few days in actual practice; that we both immediately made our discovery known to medical friends and thus to the profession, and that our respective publications in print were made on the same day, in Philadelphia and Edinburgh. As regards priority of publication, however, Mr. Murray certainly forestalled us both, his case being the first thus recorded. Personally, I do not hesitate thus far to yield the credit to Dr. Keiller, merely claiming for myself independent conception and suggestion. To Dr. Barnes belongs the merit of forcibly presenting the subject to the profession at a later date, of endeavoring by modification of our instruments to perfect one for practice, and of adopting my proposal of water as the dilating medium.

So far, as regards our several claims to the original proposal of dilatation of the cervix by pressure from above, I have referred to the value of water as compared with air for the dilating medium. This to my mind is practically as important as the idea of the dilatation itself, for it is a question that may often directly involve the life of the patient. Cases are already on record of sudden death from admission of air into the cavity of the uterus, especially towards the close of pregnancy and during labor. I need only refer to those instanced by John Reid,\* Simpson,† May,‡ Barry,§ Depaul, Gardner, Dalton and others; and whether we are to suppose the fatal result produced by the passage of air into the abdominal cavity through an abnormally patent Fallopian tube, or its forcible injection thither by the uterine contractions, or are to accept the more probable alternative, as suggested by the younger Legallois in 1829, by Ollivier in 1833, and more recently by Reid, Simpson, Cormack,|| and McClintock,¶ that the air is forced di-

\* Physiological Researches, 1848, p. 578.

† Obstetric Works, i., p. 719, ii., p. 74; Edinburgh Medical Journal Sept., 1861, p. 289.

‡ British Medical Journal, June, 1857.

§ Prov. Medical and Surgical Journal, Nov., 1850.

|| London Journal of Medicine, Vol. ii., p. 950.

¶ Medical Press, March, 1852, p. 147.

rectly into the circulation through the uterine sinuses, and so kills by inducing paralysis of the heart from overdistension, or asphyxia from more gradually increasing obstruction of the lungs, it is impossible to lose sight of the danger. To this I have repeatedly called attention on former occasions, and a marked and fatal instance of its effect has just been communicated to me by my friend Dr. Hitchcock, of Fitchburgh. In view, therefore, of the risk referred to, I have not hesitated to impress upon the students at present temporarily in my charge, the extreme caution necessary in manual or operative interference during labor, the impropriety of endeavoring to excite intra-uterine or intra-vaginal respiration, even by the method so ingeniously suggested by Dr. Jacob Bigelow, of this city,\* and also the possibility of air sufficient to produce fatal syncope being thrown into the uterine cavity where premature labor is induced by the injection of water between the membranes and uterine walls, as in cases of death related by Guillier, Germann, Chiari and others.

In the instances of the new method reported by Drs. Keiller and Murray, dilatation was effected by India-rubber sacs into which air was forcibly thrown. Against rubber for uterine or vaginal application, used in any form except vulcanite, which as yet is afforded us in too unyielding a state, there is the insuperable objection that it is chemically acted upon by the fluids with which it comes in contact and becomes at once offensive and irritating. If distended to any great extent, it is very liable to rupture, and if this be guarded against by an increase of thickness, the introduction of the sac becomes proportionately more difficult. In the use of thin animal membrane for dilatation the same liability to rupture exists, unless, as suggested by Arnott, a delicate layer of a stronger substance, as silk, be interposed between two layers of the membrane. In practice I have more than once ruptured the membrane during its distension by water, and therefore know that what I have asserted of such danger where air is used, is not unfounded. What, then, can be said of the deliberate use and recommendation of air under these circumstances? Is it not an unjustifiable exposure of the patient's life to a grave and unnecessary risk?†

To one other objection that might be alleged I must call attention, merely to state my belief that it is unfounded. There is no doubt that in the induction of premature labor by the injection of water at random between the membranes and the uterine wall, after the method of Schweighauser and Cohen, and as is now so commonly done, there is some liability of effecting an unfavorable change in the presentation of the child, and of inducing hæm-

\* American Journal of the Medical Sciences, April, 1829, p. 285.

† I might refer to various other points, of practical importance in this connection, but prefer to leave them in the hands of an intelligent and talented gentleman of the present medical class, Mr. Greene, of Fitchburg, who is preparing a monograph upon the subject.

rhage by partial separation of the placenta. It is also possible, as in two cases lately related by Simpson,<sup>†</sup> that rupture of the uterus, from excessive overdistension, may thus be produced. These remarks, however, do not legitimately apply to the subject now under our consideration. The extent of separation of the membranes, of dilatation of the cervix and of additional distension of the uterus, by the use of the enclosing sac we have proposed can be kept perfectly under control. The amount of dilatation and its exact location are accurately known from the size and position of the sac, and, in case of necessity, by a mere turn of the stop-cock we can at once effect the entire escape of the fluid and collapse of the dilatatorium.

The method we have now discussed, it will have become evident, is applicable not merely to cases requiring the induction of premature labor, but wherever for any other reason it is desirable to have free access to the uterine cavity, as for the removal of tumors, &c., &c. A consideration of these circumstances, however, I shall reserve for another occasion.



## *Editorial and Miscellaneous.*

*Registration of Massachusetts.*—Some twenty years since Dr. A. A. Gould undertook the compilation of the statistics of Massachusetts in relation to Births, Deaths, and Marriages. Notwithstanding the embarrassments connected with such a labor at that period, Dr. Gould acquitted himself very well. Much valuable information was elicited. He now submits a report for the year 1861. From this we gather a few facts concerning the events of the times. It appears that in Massachusetts there has been a marked diminution in the number of marriages and births, occasioned by the absence of so many of the young men in the service of the country. In 1861 the births were 606 less than in 1860; the number of marriages was less by 1432. The national loss, according to these figures, in 1861, in the way of births, will fall but little short of 20,000. When, now, we take into consideration the

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<sup>†</sup> Edinburgh Medical Journal, Sept., 1861, p. 290.

fact that the number of young men absent from home in 1862 is double that of the preceding year, the losses of the country, in the way of births for this year, will reach, in round numbers, 40,000 ; that is, 40,000 births less in the United States in 1862, than there would have been had the pursuits of the people not been disturbed by civil war.

On the subject of Abortion, the following is presented as the nearest approximation to truth :

" Some efforts have been made to estimate the losses by abortion, that is, the failures in child-bearing during the four early months. By calculations derived from 6,000 mothers, 17 failures to 100 births after that period were *ascertained*; the stage previous to the time at which ascertainment is possible being still more tender, the rate of loss would be proportionally larger; so that Mr. Whitehead concludes, that of the whole number of actual conceptions, not more than one half are born alive at the full period."

It seems there is a continued increase of foreign over native births in the State of Massachusetts ; and perhaps what is true of Massachusetts, will be found to be true of other New England States.

" In 1853 the excess of births of American parentage, over those of foreign parentage, was 2,793 ; whereas, in 1861 the excess of births of foreign, over those of American parentage, was 1,512, a difference of 4,305. In five counties the strictly foreign, where both parents were foreigners, exceed the American births, viz., Hampden, Middlesex, Norfolk, Suffolk and Worcester. The aggregate in these counties are, American, 8,415 ; Foreign, 11,600 ; mixed, 1,658 ; giving a preponderance of 3,185 births of foreign parentage."

The total number of deaths in the State of Massachusetts was 24,085, and of still-born children 1,017.

During the past year, we received a *Preliminary Report* on the Eighth Census, by Joseph C. G. Kennedy, Superintendent. From this report we extract the following table, which shows the deaths in the United States for the year 1860. The remarks appended, are explanatory, by the author, of Massachusetts report :

*Deaths in the United States for the Year ending June 1, 1860.*

STATES AND TERRITORIES.	Population.	Deaths, 1860.	Population to one Death.	Deaths pr. ct. 1860.	Deaths pr. ct. 1850.
Alabama .....	964,201	12,759	74	1·34	1·20
Arkansas.....	435,450	8,855	48	2·06	1·46
California.....	379,994	3,704	101	0·99	1·00
Connecticut.....	460,147	6,138	74	1·35	1·59
Delaware.....	112,216	1,246	89	1·13	1·34
Florida .....	140,425	1,764	78	1·28	1·08
Georgia.....	1,057,286	12,816	81	1·23	1·11
Illinois.....	1,711,951	19,299	87	1·14	1·38
Indiana.....	1,350,428	15,825	87	1·15	1·32
Iowa.....	674,948	7,259	92	1·09	1·08
Kansas.....	107,206	1,443	73	1·37	—
Kentucky .....	1,155,684	16,466	69	1·45	1·56
Louisiana.....	708,002	12,324	57	1·76	2·35
Maine.....	628,279	7,614	81	1·23	1·32
Maryland .....	687,049	7,870	92	1·09	1·68
Massachusetts .....	1,231,066	21,303	57	1·76	1·98
Michigan .....	749,113	7,390	100	1·00	1·16
Minnesota .....	173,855	1,108	153	0·65	0·50
Mississippi.....	791,305	12,213	64	1·57	1·46
Missouri.....	1,182,012	17,652	66	1·52	1·83
New Hampshire.....	326,073	4,469	72	1·39	1·35
New Jersey.....	672,035	7,525	88	1·14	1·34
New York.....	3,880,735	46,881	82	1·22	1·49
North Carolina.....	992,622	11,602	84	1·19	1·21
Ohio.....	2,339,502	24,724	93	1·07	1·48
Oregon .....	52,465	237	218	0·46	0·36
Pennsylvania .....	2,906,115	30,214	95	1·06	1·26
Rhode Island.....	174,620	2,479	69	1·44	1·55
South Carolina.....	703,708	9,745	71	1·41	1·22
Tennessee .....	1,109,801	15,153	72	1·39	1·20
Texas .....	604,215	9,377	63	1·58	1·48
Vermont .....	315,098	3,355	92	1·08	1·02
Virginia .....	1,596,318	22,472	70	1·43	1·36
Wisconsin .....	775,881	7,141	107	0·93	0·97
Colorado.....	34,277	—	—	—	—
Nebraska.....	28,841	381	75	1·34	—
Dakota .....	4,837	—	—	—	—
New Mexico.....	93,516	1,305	71	1·42	1·91
Nevada .....	6,857	—	—	—	—
Utah .....	40,273	374	106	0·94	2·13
Washington .....	4,594	50	228	0·44	—
District of Columbia.....	75,080	1,285	58	1·74	1·66
Totals .....	31,443,322	392,821	79	1·27	1·41

"As the above figures are but for a single year, they cannot represent very accurately the result which would be derived from an average of a long series of years. Still there is evidently a wide range in the death-rate in different States and continental regions, represented at the one extreme by Arkansas, where one person dies in every 48 inhabitants, and at the other by Oregon and Washington Territory, which are put down respectively at one death in 237, and one in 228 inhabitants; and the average for the whole country at one death in 79, 1·27 per cent. of the whole population. The relative low death-rate in the newly-settled Territories is partly accounted for by the fact that the inhabitants are mostly emigrants, in the prime of life, with a very small proportion of women, children and aged persons. Another cause of disparity is doubtless on account of the scattered and to some extent friendless condition of the people, so that many die unknown, and more still uncared for, and their fate is never reported.

"Still there is a marked difference in the several regions where the disparity cannot be accounted for by any supposed deficiency in the returns. The essential agreement on this point in the two enumerations of 1850 and 1860, places the matter beyond a doubt. There is also a table, from the Census Abstract, highly instructive and important, showing how much the death-rate is modified by the features of extensive natural regions of territory. The reputed salubrity and insalubrity of the interior continental regions (those not exposed to the influences of any sea), the Northwestern States on the one hand, and the hot, low, alluvial regions of the lower Mississippi Valley on the other, are shown to be based on ascertained facts. Every person, in selecting a place for permanent residence, may well be influenced by these considerations."

We have some singular facts, in this report, in regard to the relative increase in the United States of the negro population—free colored and slaves. "In the interval from 1850 to 1860, the total free colored population of the United States increased from 434,449 to 488,005, or at the rate of 12·33 per cent. in ten years, showing an annual increase of one per cent.; this result includes the number of slaves liberated, and those who have escaped from their owners, together with the natural increase. In the same decade the slave population, omitting those of the Indian tribes west of Arkansas, increased 23·39 per cent., which rates exceed

that of the free colored twofold." Such facts imply an excessive mortality among the free colored population of the U. States. In looking up the figures in the cities of the States north, it is found that in Boston during the five years ending with 1859, the number of colored births was one less than the number of marriages, and the deaths exceed the births in the proportion of nearly two to one. In Providence, Rhode Island, the deaths are one in 24 of the colored population. In Philadelphia, during the last six months of the census year, the city registration gives 148 births against 306 deaths, among the free colored. Generally, it is stated, the yearly deaths, in the New England States, of the colored population exceeds the yearly births. The remark is made in the report, that were it not for the accessions to the free colored population by manumission, it would in the United States approach that condition known as "a stationary population."

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*Surgeon-General Hammond.*—We see it announced in the political papers that Surgeon-General Hammond has been superceded. We have no disposition to speculate on the causes that brought about this event. Indeed, many would suppose that they occupy a position too near the surface to afford much exercise to those who are fond of looking up first principles. Surgeon-General Hammond assumed to be the mind of the medical profession, so far as the Army is concerned; and he was liberal enough towards himself to suppose that his pretensions would be at once recognized. In this, however, he has been disappointed. The Circular No. 6 withholding supplies of calomel and tartar emetic from the Surgeons of the Army has been universally regarded as improper, even as insulting. Medical men acknowledge no authority but that of superior Wisdom. Whoever proposes innovations or the adoption of any thing new, must show himself, in order to receive attention, possessed of superior knowledge. This Surgeon-General Hammond has not done. He is certainly very clever so far as information is concerned. He has given evidence too of industry. Still the Circular No. 6 is accompanied with no reason at all sound showing that calomel and tartar emetic should be withheld from the Supply Table. The Circular, it is true, stated that "modern pathology" had shown that the articles in question were useless and injurious. Upon this the Profession,

we presume, would be inclined to take issue with the Surgeon-General, and say that modern pathology has shown no such thing. All admit that these articles are not used as much now as formerly. Still they are regarded as indispensable—nothing at all having been discovered in pathology rendering them useless. Certain results can be accomplished with them in the treatment of disease that can be accomplished with nothing else known. Their sphere of application, by "modern discovery," has been limited—that is all.

It has been stated that the Surgeon-General has been collecting statistics in order to give plausibility to the Circular No. 6. That he will be able to obtain a great many cases in which the drugs in question have produced disastrous consequences, no one will doubt. But this would only prove them powerful agents—nothing more.

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*The Dermatobiotikon.*—We have received from Dr. Firmenich, of Buffalo, N. Y., an instrument for the introduction of medicine into the system through the skin. It consists of a cylinder of gutta percha, containing a number of very fine acupuncture needles, properly protected. The instrument is neatly got up, and we can see no reason why it should not answer the purpose of introducing medicine into the system through the skin very well.

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*Starling Medical College.*—The advertisement of this Institution will be found in the present number. The session commences October 22d, and continues until the 1st of March. Young men in search of an institution for a Medical education, will find much in Starling College to attract their attention.

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We publish in this number a brief notice of the late Dr. Hildreth, of Marietta. We say brief because it would require a volume of respectable size to do justice to the services of the deceased. Dr. H. impressed himself both favorably and usefully upon his age. As one of the pioneers he did much to preserve a remembrance of things connected with the early history of the State; and as a physicist, his contributions were very clever.

We see it noticed in foreign journals that *Dr. J. M. Neligan*, so favorably and so generally known in this country for his work on "Diseases of the Skin," and "Medicines: their Uses and Administration," died in Dublin, Ireland, a short time since.

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The subscription price of the *Medico-Chirurgical Review* has been advanced by Lindsay & Blakiston, the importers of the work, to \$6 00 per annum.

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*Death of Doctor Hildreth.*—Dr. SAMUEL PRESCOTT HILDRETH, so widely known as one of the leading and most esteemed citizens of Marietta, died last Friday night, about 11 o'clock—July 24, 1863—in his 80th year. He had been in usual good health—a well-preserved and happy old gentleman—until Sunday, 5th inst. On that morning he went to church, of which he was a regular attendant, but at the evening service he was too unwell to attend. He gradually sank away, his mind but little clouded, if any, until he was gathered to his fathers in the fullness of his years, only about two months less than four-score. His funeral was on Sunday, 26th inst., the services being in the Congregational Church, of which he was a member, conducted by Rev. Mr. Wakefield, of Harmar, and President Andrews, of Marietta College.

Dr. Hildreth was born in Methuen, Mass., Sept. 30, 1783, about a mile north of the present manufacturing city of Lawrence, on the Merrimac River. His family was one of some note in Massachusetts. He was descended, in the sixth generation, from Richard Hildreth, who emigrated from England over two centuries ago. Abel F. Hildreth, distinguished for many years as Principal of "Pinkerton Academy," at Derry, N. H., was his kinsman, and Richard Hildreth, the Historian, is his distant relative. His boyhood was passed in active work on his father's farm, where he acquired the habit of industry and toughened his physical powers for a long, vigorous and useful life. From a "Social Library" in the town he formed the taste for reading, and continued a great reader until his last illness. After the common school, he prepared for College at "Phillips Andover Academy," one of the best in New England. Without completing a collegiate course, he

studied medicine with Dr. Thos. Kittredge, at Andover "North Parish."

In May, 1805, when less than 22 years of age, Dr. Hildreth began the practice of medicine in Hampstead, Rockingham Co., N H., a small inland town. He there boarded with John True, Esq., whose brother, Dr. Jabez True, was then living in Marietta, having located here early in the summer of 1788, the first season of the settlement. From him he learned of a "good opening for a young man" in Marietta.

After sixteen months of practice in New Hampshire, he started, on horseback, September 9, 1806—being 23 years old that month—and arrived at Marietta October 4th, following. This place then contained about 600 inhabitants.

He remained here about nine weeks, when, on invitation of the leading citizens of Belpre, twelve miles below, to become their physician, he went to that place, December 10, 1806. That night, never more to return to it, Blennerhasset left his "fairy island."

While in Belpre, August, 1807, he married Miss Rhoda Cook. She was a native of New Bedford, Mass., and came to Ohio in 1804, her mother having purchased a farm in Belpre, nearly opposite the mouth of the Little Kanawha. For fifty-six years they trod the path of life *together*—even-tempered years to them—and reaping the reward of industry and prudence, a competence, the love of all, a family of children grown up to usefulness in life, a happy old age. Mrs. Hildreth survives, well nigh unto four-score, "young for her years."

In March, 1808, after a practice of fifteen months in Belpre, Dr. Hildreth returned to Marietta, and ever after resided here. He wrote on April 6th last: "After a laborious practice of medicine for fifty-five years, I, two years ago, laid it entirely aside, and am waiting the time of my departure with resignation and hope." The italics are ours. Who that knew Dr. Hildreth does not at once recognize the truth of these words, written by himself?—

"He is the happy man, whose life e'en now  
Shows somewhat of that happier life to come."

At the age of 27, in 1810, Dr. Hildreth was elected Representative to the Ohio Legislature. He was re-elected in 1811. He was a Democrat or Republican of that day, a supporter of the

Administrations of Jefferson and Madison. On his re-election, in 1811, he beat the late Judge Ephraim Cutler, who was a Federalist, twenty votes in Washington county. Party lines were obliterated in the Administration of President Monroe, and later years found Dr. Hildreth and Judge Cutler acting in political concert, as Whigs. So also, in 1811, the late Hon. Wm. Woodbridge, Whig U. S. Senator from Michigan, 1841-47, beat the late Hon. Wm. R. Putnam (father of the present Col. Wm. R. Putnam) for the Ohio Senate in this district—Woodbridge being a Jefferson Democrat, Putnam a Federalist. Both became Whigs, in Whig days. The taste of Dr. Hildreth did not lead him to political life, and after serving two terms in the Legislature, he never again, we believe, became a candidate for office. He always, however, held decided political opinions, and was not so careless of his duties as to neglect to vote on the side of what he believed to be the Right. He was a Republican, from the formation of that party in 1854. It is proper to state, in this connection, that in 1811, while a member of the Legislature, he was elected by that body "Collector of Non-resident Taxes," for the 3d district of Ohio—pay about \$250 a year—and held the office eight years, when, in 1819, the office was abolished.

Whatever Dr. Hildreth did he did well. In 1810, fifty-three years ago, he became Clerk of the Trustees of the Ministerial Lands, and retained the position until his death. One of his last acts in health—the last time we saw him in life—was when, a day or two before his final sickness, he came to procure a copy of an advertisement with reference to the Temporary Leases of the Ministerial Lands—the same cheerful old gentleman we had known for eighteen years. We thought then of his cheerfulness, a characteristic, and reflected :

"He wears the marks of many years well spent,  
Of virtue, truth well tried, and wise experience."

Abroad, Dr. Hildreth was known, and well known for his scientific labors, for his various publications in medicine and several scientific subjects, and in local biography and history. Among his publications, were, in 1808, a history of the Epidemic of the year 1807, in 1812, a description of the American Colombo, with a drawing of the plant; in 1822, an article on Hydrophobia, and another on a curious case of Siamese twins, in his practice—all of

these in the New York Medical Repository; in 1824, in the Philadelphia Journal of Medical Science, a full history of the Great Epidemic Fever that visited the Ohio Valley and Marietta in 1822 and 1823; and in 1825, in the Western Journal of Medicine, Cincinnati, an account of the minor diseases of the epidemic. In 1826 he published, in Silliman's Journal of Science, New Haven, a series of articles on the Natural and Civil History of Washington county. From that time until his death, nearly forty years, he was a contributor to the Journal—such articles as descriptions and drawings of fresh-water shells found in the Muskingum and other streams; several upon geological subjects, touching upon the geology of Southeastern Ohio; the salt-bearing rock; the history of salt manufacture from the first settlement of Ohio; the coal formation, etc.; "The Diary of a Naturalist;" on the 17-Year Locust in 1829, again in 1846; and from 1826 to the present time, a journal of the weather, amount of rain, flowering of plants, ripening of fruits, etc., for each year.

In 1837 Dr. Hildreth was one of the Assistant Geologists upon the State Geological Survey, and the report of his labors was published by the State, in connection with the reports of other geologists upon the survey.

In 1839 he was President of the Medical Society of Ohio, and delivered the annual address at Cleveland, a history of the diseases and climate of Southeastern Ohio from its first settlement, which was printed by the Society. In the same year, he published a History of the Settlement of Belville, Western Virginia, continued in several numbers of the "Hesperion," a magazine then published at Cincinnati, by Wm. D. Gallagher and the late Otway Curry. In 1842 and 1843, he contributed many valuable articles to the "American Pioneer," then published monthly at Cincinnati, by Col. John S. Williams. In 1848 was published his "Pioneer History," an octavo volume of 525 pages, "an account of the first examinations of the Ohio Valley, and early settlement of the Northwest Territory." His volume, octavo, 539 pages, "Lives of the Early Settlers of Ohio," followed, in 1852.

In 1830, Dr. Hildreth began in earnest the collection of a Cabinet of Natural History, from the fossils, insects, shells and plants of Ohio, and by exchanges of these, acquired minerals, insects, marine shells, etc., from other quarters. In a few years he had 4000 specimens in natural history, arranged in cases and drawers,

labeled, numbered, and entered in a catalogue—with many curious relics from the “ancient mounds.” In 185—, he donated to Marietta College his cabinet, together with his scientific library and various volumes, that are rare, upon the early history of the West. They occupy a room in one of the College buildings, known as the “Hildreth Cabinet.” This donation made Dr. Hildreth one of four or five of the largest benefactors of the College.

The cheerfulness of Dr. Hildreth has been mentioned. He “looked on the bright side of things”—loved beauty, although of an eminently practical turn of mind—was very fond of flowers, which he cultivated diligently. Industry, and system in all that he did, may be accounted among his marked points. Besides his laborious medical practice he accomplished very much, as he himself expressed it, by *saving* the “odds and ends of time.” Without having a “brilliant” mind, he forcibly exemplified the fact that “industry is talent.” He was exact in all his dealings—an honest man, a Christian. His was a *complete* life. He “finished his work.”

“His life was gentle; and the elements  
So mix'd in him, that Nature might stand up  
And say to all the world: *This was a man!*”

—*Marietta Register, July 31.*

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*Pressure at the Bottom of the Atlantic.*—Several experiments have been tried during the last few days, at the Wharf-road, to determine what effect the pressure of the Atlantic sea has upon a submarine cable laying on its bottom at a depth of  $2\frac{1}{4}$  miles. The experiments were made in Reid’s large press, capable of resisting a pressure of above 10,000 lbs. on the square inch. The specimen of cable used is known as the Persian Gulf standard, having a coating of gutta-percha  $\frac{3}{8}$  of an inch in diameter. It was subjected to a pressure equal to two miles and one quarter of a mile deep, and the pressure kept on for one hour, first having been carefully tested by what is known as Professor Thompson’s reflecting galvanometer.

Some people who call themselves electricians were of opinion that this enormous pressure—about 5,000 lbs. on the square inch—would force the water into the copper core, and by this means deteriorate the cable, if not quite destroy it.

These experiments have completely demolished this theory. On the contrary, when the pressure was removed, the cable was found to be considerably improved, and gave with the same instrument several degrees of improvement. These experiments will be continued during the course of the next week, upon a more extended scale, and carefully recorded.

At the present time several gentlemen wished to ascertain the truth of an old anecdote current at sea, that was said to be performed by an old salt, viz.: he sunk a bottle of wine to a great depth in the Atlantic, securely corked, and when pulled up all the wine had disappeared and was replaced by salt water. Another story of the same kind has been long in circulation—that if you take an empty bottle, securely corked, and sink it to a great depth, it will come up filled with salt water, while the cork remains undisturbed.

In order to test the first of these theories, six quart bottles of Bass's pale ale were submerged, securely corked and wired down, then covered with Betts's patent capsules; there were also several bottles of lemonade and ginger-beer, all properly secured in the same way.

To test the second theory of the empty bottle, one was securely corked and wired, one was corked after another fashion, having a large knob left on the cork in the form of a champagne cork, to prevent it being driven in. The third bottle had a wood cylinder put inside, resting on the bottom, and reaching the cork, to give another form of resistance to the cork. The pressure was the same as before, and the time under pressure the same, viz., one hour.

The results were as follows:—The Bass's ale came out all sound and good, the same with the lemonade and ginger-beer. The small space left by the bottle between the cork and the liquor was filled up. With this exception all was the same. The first empty bottle the cork was driven in, and as a matter of course the bottle came up filled with water. The second bottle with the large knob was also driven in, and the bottle came up full. The third, that had the wooden cylinder inside, on which the cork rested, was driven in to a certain extent, not whole, and this bottle came up also full, showing that at these great depths no corking, however secure, will prevent the water from getting into an empty bottle, and when you send the bottle down filled and well corked, there is no danger of the liquor making its escape and being filled with another; so that

the sailor must have drank the wine first, and sent the empty bottle down afterwards.

Another interesting experiment was tried to test the accuracy of Dr. Wallich's statements as regards living creatures at great depths in the ocean.

It is a generally received opinion that no living creature exists at the bottom of the Atlantic—that in these dark and silent regions of the great deep eternal silence and solitude reign, the bottom being a fine deposit of diatomates too minute for the naked eye of man.

To demonstrate this, some live carp, lobsters, eels, etc., were put in the cylinder; the same pressure (Atlantic depth) and the same time—one hour. The whole perished, and came out quite stiff, thus proving that the general opinion on this subject is correct, and that Dr. Wallich's statement wants confirmation.—*Chemical News, London, July 25, 1863, from Engineer.*

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*Doctor John Moore Neligan.*—Dublin has, within the last ten days, lost another of her celebrities. It is really appalling to reflect on the number of the more prominent members of the profession in the Irish metropolis who have been removed by death within the last few years. The veteran Peile, of

“Ingratiating manners, feeling mind,  
His hand as steady as his heart was kind,”

whose decease we recorded in our first volume for 1858, was followed to the grave in rapid succession by Harrison, Crampton, Montgomery, Marsh, Porter and Cusack. Of their contemporaries, Wilmot, Carmichael, Colles, Cheyne, had gone not very many years before.

Most of all these had, however, attained the threescore years and ten, stated on high authority to be the natural limits of human life, and some had been so strong that they had come to fourscore years and more; but it is now our melancholy task to announce the removal, in the prime of life, of one whose name has, almost from the period of his entrance into the profession, been conspicuous in the pages of medical literature.

John Moore Neligan was born in the town of Clonmel, in Ire-

land, where his father practised as a physician, in the month of June, 1815, one week after the eventful battle of Waterloo.

At the time of his decease, on July 24, 1863, he had, therefore, little more than completed his 48th year.

Having passed through the necessary courses of preliminary and medical education, he graduated as M.D. in Edinburgh in 1836. As a writer, his earliest essays appeared in the Dublin Journal of Medical Science, and in the Edinburgh Medical Journal.

His work on "Medicines; their uses and mode of administration," has passed through five editions, and a sixth is in preparation. In 1848, he was selected by the late Dr. Graves, to bring out the second edition of his far-famed "Clinical Medicine." Among his other works were his "Atlas of Cutaneous Diseases," and his "Practical Treatise on Diseases of the Skin." More particularly in this specialty he enjoyed an extensive practice. From 1849 to 1861, he was the able, diligent, and impartial editor of the Dublin Quarterly Journal of Medical Science. At home and abroad his professional reputation was deservedly high. In 1853 the University of Dublin conferred on him the honorary degree of Doctor in Medicine. He was a fellow of the King and Queen's College of Physicians in Ireland, and an honorary member of the Medical Societies of Sweden, Athens, Cork, Belfast, etc., and of the Pharmaceutical Society of Great Britain. He was for some time Physician to Jervis Street Hospital.—*Med. Times, 1st Aug.*

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*The Upas Poison.—A Dangerous Experiment.*—The upas tree of Java, known to botanists as the *Upas antiar* or *Antiaris toxicaria*, produces a milky juice with which weapons are poisoned. The poisonous principle is called *antiarin*, and contains C<sub>14</sub> H<sub>10</sub> O<sub>5</sub>. It forms small pearly crystals soluble in 27 parts of boiling water, and also in alcohol, but scarcely so in ether. Introduced in a wound, it rapidly brings on vomiting, convulsions, and death. The *Abeille Médicale* states that a short time ago a scientific gentleman at Berlin received a small quantity of the condensed juice of the upas, and resolved to try the effects of it upon himself. One afternoon he accordingly took three grains of this drug, which he found very bitter and rather saltish. Immediately afterwards he felt extremely gay, and a bad headache which he had at the time dis-

appeared ; but after awhile he experienced a sensation of oppression in the stomach. Nevertheless, he had the imprudence to go out : on turning a corner he became aware of a considerable stiffness along the spine ; this was about half an hour after having taken the poison. An hour later, while taking a cup of coffee, he felt a violent shock throughout his body and stiffness at the extremities ; at the same time his head was thrown backwards, he lost all power of speech, but his mental faculties remained unimpaired. There was a slight remission of these symptoms for a few minutes, and then a fresh attack came on ; and this continued until the patient at length succeeded in expressing a wish to be taken to the hospital of La Charité. As he was being helped down stairs to get into a carriage, a new attack impeded his progress ; but during the drive he had none, although the slightest shake seemed sufficient to bring it on. These attacks were attended with but little pain ; deglutition was very difficult, and the patient felt very weak. After every attack the muscular system relapsed into inertness. At the hospital, emetics were immediately administered to expel the poison if any remained ; the vomiting was attended with sudden starts, spasms in the glottis, and difficulty of breathing ; the latter symptom, however, soon subsided. The pulse was at 72. Thirty drops of laudanum were administered at the rate of ten for every quarter of an hour, and then thirty more, in three parts, at intervals of half an hour. The patient fell asleep, but was often awakened by the contraction of the muscles of the back and neck. Laudanum was again administered, and sleep returned. On the following morning the patient felt very weak, but only complained of stiffness in the left muscles of the neck ; the pulse was at 66. Wine and light food were now given instead of medicine, and on the sixth day the patient left the hospital perfectly recovered.—*Chemist and Druggist*, May 15, 1863.

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*Adulteration of Quinine.*—Mr. J. Brendon Curgenven, in a letter to the Dublin Medical Press, May 13th, states that *muriate of cinchonine* is extensively used to adulterate the disulphate of quinine, and he advises all who have quinine in their possession to ascertain by the following tests how far it is adulterated :—"Quinine is soluble in ether, but cinchonine is not ; quinine mixed with water, is dissolved by adding a little chlorine water ; if to this

solution ammonia be added, it becomes grass-green in color. If cinchonine be treated in the same way, the ammonia produces a white precipitate."—*London Pharmaceutical Journal, June, 1863.*

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*Death from Swallowing Blue Pills.*—An inquest has lately been held at Rogate on a woman named Caroline Stevens, who died from mercurial poisoning brought on by taking blue pills. It appeared from the evidence that she had once been ordered by a medical man to take a quarter of an ounce of blue pills in a month. She derived benefit from the prescription, and the next year she procured more in larger quantities, which she took till it affected her mouth. The following two years she obtained still larger quantities, and on both occasions it produced more or less salivation. She usually procured it in lumps of a chemist living at Petersfield. She thought the last time she left it off too soon. On the present occasion she procured more, and had been taking it six weeks. Dr. Peskett, who attended her, found, by directions of the deceased, in an old wardrobe, done up in a quack medicine paper, ten rolls of pills, which he produced. Each roll was  $1\frac{1}{4}$  inch in length, and  $1\frac{1}{6}$  inch in circumference. Deceased told him that she usually took fifteen pills twice a day; on one occasion she took fifteen three times in one day; for several weeks not less than twice a day. The druggist who sold her the blue pills said she had been in the habit of buying three or four ounces at a time. He sold it under the impression that she and her husband had bought the pills for the purpose of retailing them in the country.—*Ibid. from Medical Times and Gazette.*

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*Digestion.*—M. Brücke, of Vienna (*Constatt's J. de Pharmacie*), has communicated to the Austrian Academy of Science an interesting paper on the influence of acids and pepsin in digestion, and on the question whether the latter is formed during that process; and also, in what manner the secretion of the digestive fluid takes place. By pepsin, Brücke understands the nondescript substance emanating from the glands of the stomach, and which, in an acid solution, has the power of dissolving all albuminous matter in the stomach as well as without it. He found by a number of careful

experiments that this power is strongest in a solution of  $\frac{7}{8}$ th grammie of dry hydrochloric acid in a litre of water, decreasing when the amount of acid rose above  $1\frac{1}{2}$  or fell below  $\frac{9}{20}$ ths of a grammie. Contrary to the generally accepted views of Mulder, that part of the albuminous matter may pass into pepsin, Brücke's experiments go to show that such is not the case. He concludes that the stomach in an empty condition contains no acid fluid which is only secreted by the action of the nervous system when food is introduced. Dr. Ebstein (*ibid.*) communicates a series of experiments on the action of saliva upon starch. Like Leuchs, Frerichs, and others, he found that starch, in contact with saliva, even in the presence of some acid, to a certain extent is converted into dextrin and sugar, and that the secretions of the stomach, though of an acid reaction, do not prevent this change. Dr. E. remarks, that while secreting the saliva necessary for his experiments, he found it advisable to abstain from smoking, which, we suppose, he otherwise considers a legitimate occupation during physiological experiments; he does not, however, suggest the same caution in regard to chewing.—*Chem. News, London, July 11, 1863.*

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*Singular case of Twins.* By J. N. FRASER, M.D., L.R.C.S.,  
St. Johns, Newfoundland.

On the 15th of April last, Mrs. ——, aged 25 years, of leucophlegmatic and somewhat nervous temperament, was delivered (under chloroform) of a full grown male foetus, which was strong, and in every respect natural. Soon afterwards I proceeded to remove the placenta, but could not do so by using moderate traction. On examination per vaginam, the finger impinged upon a hard substance quite unlike the placenta, which could also be felt. The uterus was well contracted. By the exercise of slightly increased force, the placenta was removed, and together with the secundines a second male foetus was born—about four months old—perfect in every respect; and wholly free from decomposition, somewhat soft, but possessed of no offensive odor whatever. There was only one placenta and one membranous receptacle. The umbilical cords were inserted in the placenta about three inches apart. The undeveloped foetus measured in length six inches, and weighed six ounces and two drachms; the umbilical cord measured twelve

inches in length ; the head was completely flattened, but every feature was naturally formed. The question arises, was this a case of superfoetation (granting the possibility of such an occurrence prior to a certain date), or one of twin conception occurring at or about the same period ?

Dr. Churchill states "that the theory of superfoetation is opposed by physical difficulties, which are insurmountable in the present state of our knowledge." Dr. Ramsbotham says, "It is impossible to suppose that a subsequent impregnation can occur while one foetus of four, five, or six months' growth occupies the uterus. Dr. J. M. Duncan affirms "that the deciuda reflexa is not in contact with the decidua vera till after the third month, and that up to that time there may be free communication between the ovary and vagina, and consequently, liability to a second impregnation." The possibility of such an occurrence is also, I think, implied in the statement of Dr. Ramsbotham. Dr. Churchill remarks that "additional evidence, however, would be necessary to establish this opinion."

In the present instance there are no fixed data upon which to base a decided opinion ; but from all the attendant circumstances of the case, I believe it to have been one of twin conception occurring at or about the same time. From an early period to the termination of utero-gestation, the patient complained of feelings and sensations quite different to any experienced during her former two pregnancies—she suffered from considerable pain and weight about the vagina and hips, and could not take the same amount of exercise as on previous occasions. She also complained of a hardness on one side of the abdomen, distinct from the general uterine enlargement. During the whole period of utero-gestation there was no discharge of liq. amnii—no flooding. There was but one placenta and one membranous receptacle. Had this been a case of superfoetation would there not have been two placenta ? Then how account for the condition of the undeveloped foetus which must have been four or five months dead in utero, and still was perfectly free from decomposition, and gave rise to no uterine action ? According to Dr. Ramsbotham "this may be explained by the foetus never having been in contact with the external air;" then how account for some having been born putrid, under conditions similar to those related above, if the non-admission of air is of itself sufficient to prevent decomposition ? Dr. Ramsbotham adds, "or

perhaps it may be accounted for by the powerful vital principle which is resident in the gravid uterus, and which is in fervid operation for the purpose of bringing to perfection the living being it contains, protecting the dead mass from the ordinary changes of decay, and acting as an antiseptic power." This, if not quite satisfactory as an explanation, is at all events a beautiful hypothesis. There is nothing in the after-history of the case necessary to be mentioned; convalescence having been rapid and uninterrupted.

—*Canada Lancet.*

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*Employment of Position in Controlling Hæmorrhage.* By FRANCIS B. QUINLAN, M.D., Trin. Coll., Dublin, Medical Adviser to St. Vincent's Hospital.

Pain, shock to the nervous system and hæmorrhage may be fairly considered the principal sources of immediate difficulty and danger in the actual performance of extensive surgical operations; and, as the all but universal employment of anaesthetic agents has, to some degree, neutralized the first two impediments, it may be of advantage to recur to a plan of diminishing venous hæmorrhage, which, employed and described in the year 1845, has since been frequently resorted to, although not always with due acknowledgment to Dr. O'Ferrall, of St. Vincent's Hospital, the distinguished surgeon by whom this plan was first devised. It will be admitted that, while most cases of arterial hæmorrhage are susceptible of comparatively easy control, there is scarcely any bleeding so rapid, so tremendous, or so alarming in its effects as that experienced in the removal of large scrotal tumors, when the enormous tortuous veins—usually found in connection with these growths—have been divided while in a state of repletion; and it is to guard against such hæmorrhage that the plan to which I have alluded is especially directed.

The accuracy of these statements will be easily established by a brief review of some operations of the kind which have been performed with and without having recourse to this plan.

In the first of these cases, a large scrotal tumor, weighing about fifty pounds, was removed by the late Mr. Liston, the veins being in an engorged condition. Upon the first incisions being made, the blood flooded out, to use the words of that celebrated operator, "as

from a shower-bath ;" the patient rolled in exhaustion and agony from the table, and the operation was completed upon the floor; the patient collapsed, and was with difficulty restored by the energetic exhibition of stimulants. In Mr. Aston Key's operation, performed upon the Chinese Hoo-Loo, the results were similar, but, from the feeble Asiatic temperament of the patient, more disastrous. The operation lasted an hour and three quarters, and the patient, who had shown some signs of syncope during its continuance, died immediately after its conclusion. It may be observed that in both these cases the genital organs were necessarily sacrificed in an effort to hurry the operation to a conclusion, in order to save the patient from impending death from hæmorrhage.

Results of this character, occurring in the hands of some of the first operators of the day, were sufficiently appalling; and it speedily became evident that, unless some means could be devised to diminish this excessive hæmorrhage, the removal of such tumors must, like the extirpation of bronchocele, be for the present abandoned. It was, therefore with peculiar satisfaction that the profession learned, in the *Dublin Hospital Gazette* of February, 1845, that a method of operation had been devised by Dr. O'Ferrall, by means of which he had removed an enormous scrotal tumor (fully equal to those removed by Liston and Aston Key) without difficulty in eight minutes, and with the loss of only five ounces of blood; the genital organs being preserved, and the patient having made a good recovery, notwithstanding attacks of erysipelas and various other unfavorable circumstances. Such an announcement could not fail to be in the highest degree gratifying; and it became all the more so when it was found the importance of Dr. O'Ferrall's plan of operation was only equaled by its extreme simplicity. Observing the great change produced in turgid varicose veins of the leg by placing the patient upon his back and elevating the limb, and the immediate arrest of hæmorrhage from such veins which ensues upon the adoption of this position, it occurred to Dr. O'Ferrall that, if the enlarged scrotum were held up, a similar withdrawal of the vital fluid would take place, particularly as regards the enlarged and tortuous veins which were the principal sources of hæmorrhage. The result completely justified the accuracy of this expectation—the more so as the hæmorrhage in these cases had been always observed to be principally

of a venous character; the arterial hæmorrhage, in Aston Key's case, being estimated to be scarcely one-twentieth of the whole.

Since the publication of Dr. O'Ferrall's plan, a complete change has occurred in these operations, which have since been performed in rather considerable number, and with an ease and success more or less resembling that experienced in his case. I now recur to the plan, because in two instances of operation published during the present year (in one of which an Asiatic was the subject) it appears to me that the able and successful operators, although adopting the method, omitted, in their reports of the cases, to make due acknowledgment to the author; contrasting, in this respect, with Mr. South, who, in his splendid work on Surgery, gives due prominence to Dr. O'Ferrall's plan.

The application of this method is by no means limited to the removal of large scrotal tumors. On the contrary, it has been resorted to by Dr. O'Ferrall in cases of considerable innocent tumors of a vascular character; and in amputations he has obtained great advantages by loosely applying the tourniquet, elevating the limb, emptying it of venous blood by manipulation, and then tightening the tourniquet. The limb can thus be kept in a state of comparative anæmia while the amputation is being accomplished; and a loss of blood can be prevented, which, by deteriorating the general quality of the vital fluid, might have laid the foundation of subsequent disease. In fact, the value of a position by which the entrance of arterial blood into a limb will be retarded, and the exit of venous blood facilitated, is almost as useful in the performance of an operation as in the treatment of inflammation.—*London Med. Times and Gazette.*

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*Average Birth-Rate.*—In Scotland 34,443 births were registered in eight towns (Glasgow, Edinburgh, Dundee, Aberdeen, Paisley, Greenock, Leith and Perth) during the year 1862, being in the proportion of 384 births in every ten thousand of the estimated population, or one birth in every twenty-six persons. Of these, 3,424 were illegitimate. To whatever cause it may be owing, certain it is that the proportion of illegitimate births seems to be increasing year by year. The average birth-rate in London for the last ten years, gives 337 births in every ten thousand of the estimated population.—*Ibid.*

*Strength of the Fibres of Orleans Cotton.*—Mr. Charles O'Neill exhibited a mounted fibre of Orleans cotton, torn by a gradually increasing weight suspended to its extremity. It had sustained a weight (gradually increased) of 162 grains for many minutes. Mr. O'Neill stated that there were 143 such fibres in '01 grain of cotton, each fibre therefore weighing less than the ten-thousandth part of a grain. The strongest fibres were capable of supporting more than two million times their own weight. He is engaged in making experiments upon the tensile strengths of various fibres by a special apparatus, but they are not yet completed.—*Jour. Fr. Inst.*, from *Proc. Manch. Lit. and Phil. Soc.*, March 16, 1863.

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FOR THE SESSION OF 1863-64.

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R. OGDEN DOREMUS, M.D., Professor of Chemistry and Toxicology.

AUSTIN FLINT, Jr., M.D., Professor of Physiology and Microscopical Anatomy.

HENRY D. NOYES, M.D., Demonstrator of Anatomy.

N. R. MOSELEY, M.D., Prosector to Chair of Surgical Anatomy.

SYLVESTER TEATS, M.D., Prosector to Chair of Operative Surgery and Surgical Pathology.

A. W. WILKINSON, M.D., Assistant to Chair of Chemistry and Toxicology.

ARTHUR A. SHIVERICK, M.D., Assistant to Chair of Principles and Practice of Medicine.

### PRELIMINARY TERM.

The preliminary term will commence on Wednesday, Sept. 16, 1863, and continue to the beginning of the regular term, viz., for four weeks.

Instruction during this term will consist of didactic courses on special subjects of interest and practical importance, together with daily clinical lectures. The college lectures during this term are given exclusively by members of the Faculty. Attendance during this term is not required, but students are earnestly solicited to attend; it being designed to make this term not merely a nominal, but an actual extension of the period of instruction.

### REGULAR TERM.

The regular term will commence on Wednesday, Oct. 14, 1863, and end early in March, 1864.

During the whole of the session the student will have the opportunity of attending at least two clinical hospital lectures daily. In addition to these, four didactic lectures are given on every week day except Saturday, in the college building within the hospital grounds. The didactic lectures are so arranged as not to interfere with hospital attendance. Ample time is allowed for accompanying the visiting Physicians, Surgeons, and Obstetricians of the hospital, attending clinical lectures, witnessing Surgical and Obstetrical operations, autopsies, etc., without compromising any of the courses of didactic instruction, the latter being as complete in this Institution as in Colleges not connected with hospitals. Clinical and demonstrative teaching constituting the great feature of this College, the arrangements are such as to render the immense resources of the hospitals available to the fullest extent.

All the lectures in this College are given either in the hospital or in the College building within the hospital grounds.

The Bellevue Hospital receives annually from ten to twelve thousand patients.

The annual number of births in the hospital is about five hundred. The Blackwell's Island Hospital contains usually about one thousand patients, a large proportion being affected with chronic diseases. This Hospital contains always several hundred cases of syphilis. In addition to the vast field of clinical instruction afforded by these hospitals, the student may avail himself of the other Institutions under the government of the Commissioners of Public Charities and Correction, together with the varied resources for practical instruction contained in the great Metropolis.

The facilities for the study of practical Anatomy are unlimited. Anatomical material is supplied free of expense.

The fees for tickets to all the lectures, during the Preliminary and Regular Terms, amount to \$105; tickets for one or any number of the seven departments of instruction may be taken out separately. The Matriculation fee is \$5. The Demonstrator's ticket is \$5. Graduation fee is \$30. No other fees are required. The Hospital ticket is gratuitous, after Matriculation. Students who have attended two full courses in other accredited\* schools, receive all the tickets for \$56, exclusive of the Matriculation fee. Students who have attended two full courses in this College, or after one full course in this College, having previously attended a full course in some other accredited school, will be required to matriculate only. Graduates of other accredited schools, after three years, are required to matriculate only; prior to three years, they receive a general ticket for \$50.

Payment of fees is required in all cases, and tickets must be taken out at the commencement of the session. There are no exceptions to this rule.

Twenty-two resident Physicians and Surgeons are appointed annually, after an examination and recommendation by the Medical Board of the Hospital. They receive a salary sufficient for their support.

Comfortable board and lodging may be obtained for from \$3.50 to \$5 per week.

Students on arriving in the city are requested to report at once at Bellevue Hospital, situated on the East river, between 26th and 28th streets, and inquire for the Janitor, Mr. Edwin A. Ware, who will take pains to aid them in securing comfortable accommodations, without delay.

For circulars of the College, giving fuller information, etc., address the Secretary of the Faculty, Prof. Austin Flint, Jr., Gramercy Park House, New York.

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\* Eclectic and Homœopathic schools are not accredited.

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## CINCINNATI COLLEGE OF MEDICINE AND SURGERY.

### SESSIONS OF 1863-4.

The SIXTEENTH Regular Course of Lectures in this Institution will commence on *TUESDAY, the 27th day of OCTOBER, 1863*, and continue four months. Preliminary Lectures will be given for two weeks previous to the regular course.

The FOURTH SPRING Session will commence on the first Tuesday in March, 1864, and end the last week in June.

At the close of each term, the Degree of Doctor in Medicine will be conferred upon all candidates who shall have complied with the requisitions of the school, and passed a satisfactory examination.

#### F E E S F O R E A C H C O U R S E :

Professors' Tickets,	- - - - -	\$35 00
Matriculation Ticket,	- - - - -	5 00
Demonstrator's Ticket,	- - - - -	5 00
Commercial Hospital Ticket,	- - - - -	5 00
Graduation Fee,	- - - - -	25 00

Boarding can be obtained at from \$2.50 to \$3.50 per week. Students, on their arrival in the city, by calling at the College, south-west corner Longworth St. and Central Avenue, will be conducted to a boarding house by the Janitor.

For particulars see Announcement, or address

PROF. A. H. BAKER, M.D., President,  
316 West Sixth St., Cincinnati, Ohio.

R. C. S. REED, M.D., Registrar.

# MEDICAL COLLEGE OF OHIO.

## SESSION OF 1863-'4.

The regular Course of Instruction in this Institution will open on Monday, the second day of November, and continue four months. Clinical Lectures will be delivered during the month of October.

### FACULTY.

- L. M. LAWSON, M.D., Professor of the Institutes and Practice of Medicine.  
GEO. C. BLACKMAN, M.D., Professor of Surgery and Clinical Surgery.  
W. W. DAWSON, M.D., Professor of Anatomy and Physiology.  
M. B. WRIGHT, M.D., Professor of Obstetrics and the Diseases of Women and Children.  
JAMES GRAHAM, M.D., Professor of Materia Medica and Therapeutics.  
NELSON SAYLER, A.M., L.L.B., Professor of Chemistry.  
CHARLES KEARNS, M.D., Demonstrator of Anatomy.

### FEES.

Professor's Tickets .....	\$60 00
Matriculation Ticket (payable once) .....	5 00
Dissecting Ticket .....	5 00
Commercial Hospital Ticket .....	5 00
St. John's Hospital Ticket .....	3 00
Graduation Fee .....	25 00

Students have the privilege of taking any number of tickets that may suit their purposes. Boarding can be obtained at \$2 50 to \$3 00 per week. Students will be aided in procuring boarding houses, by applying at the College, on the south side of Sixth street, between Vine and Race streets.

Further information may be obtained by addressing the Dean.

**L. M. LAWSON, M.D., Dean,**

S. E. corner of Race and Sixth streets.

# OHIO

## MEDICAL AND SURGICAL JOURNAL.

Vol. 15.

Columbus, November 1, 1863.

No. 6.

### Original Communications.

*Trial for Murder by Poisoning with Arsenic.—Discovery of the Poison after Seventeen Months.* By T. G. WORMLEY, M. D.

At the term of Court held by Judge Evans at Zanesville, Muskingum county, Ohio, in June last, Mrs. Cloe Ann Culbertson was tried for the murder of her husband, John Culbertson, by poisoning with arsenic. Judge Marsh and John Haynes appeared as counsel for the State; Messrs. Blocksom and Guille for the prisoner.

It appeared in evidence, that the deceased was in the 70th year of his age, and that he had been in ill health for several years prior to his death, which occurred on Wednesday, October 9th, 1861. The symptoms attending his death were very obscure. When examined by his physician on the previous Friday, he complained of flying pains throughout the body, dizziness, thirst, constipation, and that his feet were swollen. He was ordered a cathartic of cream of tartar and jalap. His symptoms continued without any marked change, so far as appeared in evidence, until Wednesday morning, when he expressed himself much better and desired to get up and eat his breakfast, but upon the advice of his physician he remained in bed. About noon Mrs. Culbertson and another woman entered his room to give him some soup which

they had prepared, when he stated that he desired to get up to stool, upon which they left the room. After a few minutes they heard him fall, and upon immediately entering his room found him dead upon the floor several feet from the bed. He had deposited a portion of the contents of his bowels near the bed and over the floor to the place at which he lay, but had not reached the chamber, which was about seven feet from the bed.

At the time, his death caused no suspicion whatever, but was pronounced to be due to apoplexy. No attention was directed to the case until early in March, 1863, when, during a state of intoxication, Mrs. Culbertson confessed to a servant girl, who had just come into her family and who was entirely ignorant of the circumstances attending Culbertson's death, that a man, who was a tenant upon a portion of their farm, had procured her some arsenic, which she administered to her husband at three different times; the first dose caused him to swell, the second to swell more, and the third killed him. At a subsequent investigation of the case, there was a failure to show that the person charged had obtained any poison, but it was shown that Mrs. Culbertson, several weeks prior to her husband's death, had obtained about half an ounce of arsenic for the alleged purpose of killing rats.

On the 9th of March John Haynes, Esq., Prosecuting Attorney for the County, instituted a *post mortem* examination of the body of Culbertson, which was performed in chief by Dr. D. Day of Zanesville, to whom I am indebted for the following account of the appearances of the body, which is substantially the same as that given at the trial.

Upon removing the earth, it was discovered that the vault contained some four inches of water. The vault was cut in a stratum of soap-stone shale, which laid four feet below the surface, and was favorable for containing water in much larger quantities. The coffin was sound and made of black walnut; the clothing was saturated with water; there was no fetor, the only smell being of musty, moist cloth; the features and soft parts of the throat were gone or converted into a dark greasy material. Upon removing

the arms from the breast, the bones of the hands dropped off and the elbow joints broke assunder. The bones of the feet had also fallen, and the flesh on both extremities had given place to a dark unctuous matter. Upon opening the clothes, the sternum fell into the cavity of the thorax, which was occupied only by the saponaceous debris of the thoracic organs, diaphragm and intercostal muscles. The abdominal walls were in a surprising state of preservation, of the color of old parchment, and well attached to the pubis, crest of the ilium and lumbar region, but flattened against the forward curve of the vertebral column and sparingly attached at the costal portion. Upon making the incisions, the integuments were firm, and the muscles were of a pink hue but very attenuated. The omentum was large and in place and covered with saponaceous matter. The stomach and intestines were pale, comparatively dry and appeared as though the convolutions had been pressed together; they were very firm and allowed free manipulation. The alimentary canal was removed from the middle of the œsophagus to the lower portion of the rectum. The odor exhaled at this time was very peculiar though not disagreeable. The pancreas and spleen looked remarkably recent, as did the liver, though this organ was much diminished in size. The posterier walls of the abdomen, the mesentery and kidneys, were well preserved. The genital organs were destroyed, though the bladder was in a very good state of preservation.

On the 11th of March the above abdominal organs, carefully sealed in a clean glass jar, were delivered to me for a chemical examination. Three separate examinations were made.

1. *The Stomach.*—This organ formed a flattened mass with the sides somewhat adherent, and contained a small quantity of dark colored solid substance. The tissue was tough and appeared recent. The mass, after cutting into very small pieces, was mixed with eight ounces of distilled water and two ounces of pure hydrochloric acid and moderately heated for about two hours when it had become a homogeneous mixture. After allowing it to stand for about one hour the mixture was strained through muslin, and

the reddish brown liquid concentrated at a moderate temperature, to three fluid ounces.

a. About one fluid dram of this liquid, acidified with a few drops of pure, hydrochloric acid, was boiled for a few minutes with a piece of bright copper foil, about one-fourth inch long by one tenth inch wide, when the metal received a very good steel-like coating. The copper was then removed, washed, dried and heated in a small contracted reduction tube, similar to those described by me for the detection of mercury by the copper test, (London Chemical News, Oct. 1860, p. 194,) when it furnished a just perceptible sublimate which under the microscope was found to consist of innumerable octahedral crystals of arsenious acid.

b. About seven drams of the liquid, acidified with hydrochloric acid, were now mixed with the above liquid, and the mixture boiled with consecutive slips of copper foil, one inch by one-tenth inch, until twenty pieces had been added. These were all coated with a steel-like deposit. A few of these slips, when cut into small pieces and heated in a small reduction tube, furnished a very satisfactory sublimate of crystals of arsenious acid. Although these reactions, and others not detailed above, showed conclusively the presence of arsenic, yet they indicated that it was present only in small quantity.

c. The remaining two ounces of liquid obtained from the stomach, were now diluted with a few ounces of distilled water, acidified with hydrochloric acid, and then exposed to a stream of washed sulphuretted hydrogen gas for several hours. This yielded a distinct precipitate, which after allowing the mixture to stand in a moderately warm place for about eighteen hours, subsided to a quite good deposit having a dirty brown color. The mixture was now filtered through paper, the filter washed with a small quantity of water containing sulphuretted hydrogen, and the moist residue washed with diluted ammonia. This filtered ammoniacal liquid was then evaporated to dryness in a porcelain dish, the residue treated with a few drops of concentrated nitric acid, and the mixture evaporated to dryness at a moderate heat. This opera-

tion with nitric acid was repeated a second and third time, when it left a yellowish residue. This was treated with a few drops of concentrated solution of caustic soda, the liquid evaporated, and the residue fused with a small quantity of a mixture of carbonate and nitrate of soda. Having thus entirely destroyed the organic matter and changed the sulphuret of arsenic into arsenic acid, which remained as arsenate of soda, the mass was dissolved in a small quantity of water, strongly acidified with pure sulphuric acid, and the mixture evaporated until it evolved dense fumes of sulphuric acid, by which any nitric and nitrous acids present were expelled. The residue was then dissolved in a few drams of pure water and the colorless solution saturated with sulphurous acid gas. After allowing the mixture to stand for a few hours the excess of gas was expelled by a gentle heat, and the liquid evaporated to two drams of fluid.

*Marsh's Test.*—One dram of this solution was consumed in the application of Marsh's test, using an apparatus containing less than a fluid ounce of dilute sulphuric acid. From the ignited jet it furnished several very good deposits of metallic arsenic; upon heating the horizontal portion of the reduction tube, it yielded a very good deposit of the metal. The true arsenical nature of these deposits was fully confirmed by subsequent reactions.

*Reinsch's test*, applied to about half of the remaining fluid, gave very satisfactory evidence of the presence of the poison.

*Sulphuretted hydrogen*, when passed into the remaining liquid, yielded after a very little time a distinct turbidity, which, after a time, subsided to a distinct yellow deposit.

In a chemical point of view, the presence of arsenic in the stomach was fully established by the experiment *a*, yet for medico-legal purposes it is always best, when there is sufficient material on hand, to apply several tests, and thus show the presence of the poison by different methods, each independent of the other. Although there was sufficient poison present to indicate its presence conclusively by each of the above methods, yet after a very care-

ful estimate we concluded that the absolute amount present did not vary much from the twentieth part of a grain.

2. *The Liver.*—This organ, which was in a quite good state of preservation, was cut into small pieces and digested at a moderate heat for a few hours with about fifteen ounces of distilled water, containing one-fifth of its volume of pure hydrochloric acid. After allowing the mixture to stand for a few hours it was strained, the strained liquid concentrated to a small volume, allowed to cool, and again strained. The clear brownish-red liquid thus obtained was then examined by the copper test for arsenic, when it furnished several very distinct sublimes of arsenious acid. Although the quantity of poison recovered was extremely small, yet its presence was unequivocally demonstrated. A few of these sublimes contained a number of mercury globules. We could not learn that the deceased had taken any mercury shortly prior to his death.

The small quantity of arsenic present in the liver precluded the application of any of the other tests. The reduction tubes used in the above experiments were of the form already referred to. Had we used any other it is almost certain that the poison would have escaped detection.

3. *The Intestines, Spleen, Pancreas and Mesentery.*—Having shown the presence of the poison in the stomach, and that it had been absorbed and entered the liver, and on account of the very offensive nature of the remaining organs, these were examined together. For this purpose they were cut into small pieces and digested with distilled water and hydrochloric acid, much in the same manner as described in the preparation of the stomach. Four fluid ounces of residual liquid were obtained.

Two fluid drams of this liquid, diluted with water and acidified with hydrochloric acid, were examined with a few inches of copper foil; the foil very promptly received a steel-like coating. The coated copper being washed, dried, and heated in an ordinary reduction tube, yielded a sublimate of crystals of arsenious acid quite satisfactory to the naked eye. This operation was repeated

upon the same liquid until it furnished about twenty inches of coated copper.

The poison was now precipitated from the remaining liquid by sulphuretted hydrogen, and the sulphuret of arsenic thus obtained, freed from organic matter by ammonia, nitric acid, etc., in the manner described, when considering the purification of the sulphuret from the stomach. The ultimate solution obtained measured three fluid drams.

Fifteen grain measures of this liquid, when examined in two separate portions in a small Marsh's apparatus, furnished from the ignited jet quite a number of deposits, and by heating the reduction tube two extremely fine deposits of metallic arsenic.

Five grains of the solution, when diluted and submitted to the copper test, furnished several magnificent sublimes of crystallized arsenious acid.

The remaining fluid was then treated with sulphuretted hydrogen. The pure sulphuret of arsenic thus obtained indicated the presence of one-sixth of a grain of arsenious acid. During the examination of the organs now under consideration a number of confirmatory tests were applied, which are not referred to above.

From the fact that the amount of poison actually recovered from the body was less than has heretofore been known to have destroyed life, it was urged at the trial that the evidence of poisoning was defective. When we consider the many ways in which a poison may escape, even from a recent body, and that in no instance are our chemical methods absolute, the absurdity of this objection is too apparent to require argument; yet it is a singular fact that there is scarcely a trial for murder by poisoning in which it is not brought forth. It would be about as reasonable to contend that a person who had died from the bite of a venomous serpent had not died from the effects of a poison, because, as yet, chemistry was unable to reveal the presence of the poison in the system.

After an absence of a few hours, the jury returned a verdict of guilty of murder in the second degree.

COLUMBUS, O., Oct., 1863.

*Chase General Hospital,  
CAMP CHASE, OHIO, Oct. 7th, 1863.*

**DR. JOHN DAWSON,**

*Editor Ohio Medical and Surgical Journal:*

DEAR SIR,—I herewith send you a copy of Orders emanating from the office of the Surgeon General U. S. A., in relation to impure vaccine virus used in this Hospital, and also my report thereon. I send you this Order and Report, not because of any great professional interest they may contain, but merely to show the professional public the rigid scrutiny constantly exercised by the head of the Medical Department of the Army.

Very respectfully yours, etc.,

R. N. BARR,

*Surg. in charge U. S. Gen. Hospital, Camp Chase, Ohio.*

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Extract from Report of Inspector of the Chase U. S. Gen. Hospital near Columbus, O., July 18, 1863, by Lt. Col. S. Humphries, Medical Inspector U. S. A.

\* \* \* \* \*

Diseases prevention of, none at present. Vaccine virus heretofore in use impure, often producing ulcers.

\* \* \* \* \*

A true extract.

B. E. FRYER,

Ass't Surg. Gen'l, U. S. A.

Respectfully referred to the Medical Director of the Department of the Ohio, who will investigate the source from which the within mentioned vaccine virus was obtained, and prevent its further issue.

By order of the Act. Ass't Surg. Gen'l:

B. E. FRYER.

A. S. G. OFFICE, Aug. 8, 1863.

*Medical Director's Office, Department of the Ohio,  
CINCINNATI, O., Aug. 12, 1863.*

Please report upon the subject of the inclosed papers, and return the report with the documents to this office.

Respectfully,

J. T. CARPENTER,

*Surg. U.S.V., Ass't Med. Director.*

DAVID STANTON,

*Surg. U.S.V., Supt. Hospitals Columbus, Ohio.*

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*Office Supt. Hospitals,  
COLUMBUS, O., Aug. 13, 1863.*

Respectfully referred to R. N. Barr, Surg. in charge Chase U. S. Gen'l Hospital, who will report on the inclosed papers, returning all papers to this office.

Please send history of private George Noice, of Capt. Neil's Independent Battery of O. V., who died in Hospital. Find out, if possible, where the impure virus came from.

Very respectfully,

D. STANTON,

*Surg. and Supt. Hospitals.*

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*Chase General Hospital,  
CAMP CHASE, OHIO, Aug. 12, 1863.*

D. STANTON, U.S.A.,

*Surg. and Supt. Hospitals, Columbus, Ohio:*

*Sir,—*—In relation to the inclosed order, I have the honor to report, through you, that on careful investigation, I learn that the impure virus alluded to by Lt. Col. S. Humphries, Medical Inspector U.S.A., in his report, was obtained from a paroled soldier, brought to this camp from Lagrange, Tenn., early in April last. I cannot trace the origin of the virus further back, nor the character or dia-

thesis of the soldier importing it to this camp. As nearly as I can ascertain, seventeen of the inmates of this Hospital were inoculated from this virus without the knowledge of the Surgeon then in charge, or any medical officer then in the Hospital. The men vaccinated themselves, from the virus obtained as above stated. In two of them no effect whatever was produced; in fourteen, it resulted in large sloughing ulcers, resembling very nearly the phagedenic chancre, and attended with well marked constitutional depression, and requiring in all cases tonics, and in some cases stimulants. In most of the cases a healthy granulation was established, in periods of from two to four weeks, without other treatment than an occasional aperient, with tonics and slightly stimulating poultices. In three instances (the cases being at the time under my immediate charge), in order to arrest the progress of the sloughing process, I cauterized them thoroughly with nitric acid, and after the escar came off, used topically an aqueous solution of bromine, of twenty minims of the officinal strength to the pint of water. With one exception, under this treatment, they all finally recovered. In a few cases, still under my observation, no symptoms of secondary syphilis, or other constitutional defects, have appeared.

One case, in the person of George W. Noice, private of Captain Neil's 22d Ohio Vol. Independent Battery, I deem of sufficient professional interest to report in detail. This soldier entered the Hospital June 22d, 1863, laboring under an acute attack of orchitis a metastasis of parotitis. While making my morning visits, on the second day after his admission to the Hospital, he called my attention to his left arm, on which was an ulcer, over the region of the insertion of the deltoid muscle, about twice the size of a silver dollar. I also found the lymphatic glands in the axilla much inflamed and swollen, and that pus had formed.

On inquiry, I learned that he had vaccinated himself from the virus, already spoken of in this report, about two weeks previous to his admission in this hospital; that four days after vaccination, a

pustule appeared at the point of insertion of the virus ; that soon after his arm began to swell and be painful, and the pustule assumed the appearance of an ulcer ; no scab having formed, and that about the same time, that is, on the fourth or fifth day, the swelling in the axillary space commenced. I immediately anticipated trouble. My patient was of delicate constitution ; imperfect in general development (at 20 years). His mother had died of phthisis pulmonalis. Countenance anxious ; pulse 100 per minute. Considering the orchitis a small matter, I applied simply a lotion of plumbi acetum to the swollen testes, lanced the abscess in the axilla, and put him on the following : Rx, tinct. ferri. murias, gtt. x, at 6 A. M., 12 M., and 6 P. M.; pulv. Doveri at 9 P. M. Diet, beef-tea ad libitum, with local application to ulcer of yeast poultice. I continued this prescription daily for a week, maintaining pretty well the strength of my patient ; but the phagedena was gradually increasing in dimension, and assuming the form of a serpiginous chancre ; the edges of the sore became thin, livid and oedematous, and turned back upon the sound skin, like a flap ; the axilla slowly granulating. July 1st. Pulse 118, tongue tremulous, brown, and slightly crusted in the center. Rx, sul. quin., gr. xv, aromat. sul. acid, qs., spir. frumenti, 3 ii. Sig. tea-spoonfull every four hours during the day. Morph. sulph., gr. ss., at 9 P. M. Beef-tea continued, and ulcer cauterized with solid nit. argenti, and afterwards dressed with lint, saturated with olium olivia. This treatment was kept up daily, steadily, until the 7th of July (omitting the cautery) ; my patient gradually emaciating and vital forces diminishing, and ulcer increasing in size. This morning (July 7th), pulse 115, tongue dry, brown and tremulous ; emaciation great, urine scanty, countenance anxious and haggard. Rx, cautery nit. acid, followed with poultice of linseed, and internally, quinine and whisky freely, and farinaceous diet. Morphine continued at bedtime in ss. gr. doses. This treatment was continued until July 11th (again excepting the cautery). At this time the prescription was changed to Rx, ferri. et quin. citras, 6 i, aqua pura, 3 iii. Mice sig. teaspoonfull every four hours during

the day; at 9 P. M., morph. sulph., gr. ss., soda bi carb., gr. iv, camph., gr. ii. July 12th. Treatment continued. July 13th. Pulse 120 and feeble, prostration great; the slough had extended from the shoulder nearly to the elbow-joint, and nearly encircling the arm, completely dissecting off all the cellular tissue, exposing the deltoid and biceps flexor cubiti muscles; also portions of the triceps extensor cubiti, and exposing the brachial artery, and strangely enough, the phlegmon in the axilla had almost entirely healed. Prescription this morning (July 13), bromine wash, strength, officinal solution, gtt. xxx; aqua pura, Oi, applied morning and evening; milk punch ad libitum; anodyne at bedtime, pulv. Doveri, gr. x, camph. gr. ii. July 14. Appearance of sore better. Slough cleaning up, skin and tongue slightly moist; had a free discharge of urine; pulse 110 per minute. Prescription of yesterday continued. July 15. Sore clean, with healthy pus and granulations commenced, and convalescence fairly established. Treatment continued.

From this date to the 20th of the same month, no change of treatment was had, except the bromine was applied once a day. The granulating process progressed well, appetite and strength increased, all the secretions became normal, and I felt proud of the progress Little George (as we all called him) was making toward recovery. There was rejoicing through the entire ward; everybody was interested in him; the good women of the neighborhood brought him bouquets and palatable delicacies. But on the morning of July 20th he was attacked with dysentery, which was at the time an epidemic in the hospital. In his prostrated condition, under this new malady, he rapidly sank, and in spite of my efforts, aided in counsel by Surgeon Bailey, who was then Surgeon in charge, he died on the evening of the 23d of July. No post-mortem was made, from the fact that, because of his great patience and gentleness, I had become much attached to him. I thought the scalpel would reveal nothing new in his case. In conclusion, I have only to add, that I believe the bromine arrested the progress of the sloughing process in the case of Private Noice, as it

has in all other gangrenous or syphilitic sloughs in which I have used it, and I am also fully persuaded that the antiseptic detergent and other medicinal properties of this drug, have not been overrated by its most enthusiastic friends and admirers.

I have the honor to be,

Very respectfully,

R. N. BARR,

*Surg. Chg. Hospital.*

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## American and Foreign Intelligence.

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*Lecture on Vaccination*—Delivered at St. Mary's Hospital Medical School. By GRAILY HEWETT, M.D., Lecturer on Midwifery and Diseases of Women and Children.

GENTLEMEN: As one of the teachers on Midwifery and Diseases of Women and Children in this medical school, it devolves on me to impart to you some instruction on the subject of vaccination. The existing state of things is such that the responsibility of performing the operation of vaccination falls almost universally on obstetric practitioners; and for this reason it has been found convenient to arrange so that vaccination shall form a portion of the course of lectures on obstetrics and allied subjects.

Of four out of the principal discoveries for which humanity is deeply indebted to Medicine—the cure of intermittent fever by Peruvian bark, the invention of the forceps in midwifery practice, vaccination as a remedy for smallpox, and the use of anæsthetics—the discovery of vaccination stands pre-eminent. Regard the matter from whatever point you will, it cannot be denied that vaccination is a greater remedy, a larger saver of human life, and a therapeutical agent more potent, than any of which we are possessed. If other remedies have saved their thousands, vaccination has saved its tens of thousands.

The responsibility of, and the necessity for, placing before you an exact statement as to the nature and power of vaccination are thus equally great. The very circumstances that the remedy is so sure has operated injuriously as regards the extent to which it has been considered necessary to impart systematic instruction on vaccination at the medical schools throughout the country. While,

however, the power of vaccination to prevent smallpox is day by day more substantiated by facts, it is now beginning to be recognized that, in order that it may afford all the protection it is capable of affording, it is essential that great care be exercised in its performance. Hence, also, the necessity for a more systematic instruction of students in medicine in all that relates to vaccination has come to be admitted. It has been stated on very high authority that vaccination is better performed in most countries in Europe than in England. It is probable that in other civilized countries, simply owing to the greater care and attention there bestowed upon the operation, the immortal discovery of Jenner has more largely benefitted the community than in England, its birth-place.

I shall now proceed to lay before you the principal facts regarding vaccination, the mode of its performance, the best means of insuring success, the differences between good and bad vaccination; and lastly, I shall endeavor to point out why it is that vaccination has, particularly of late, appeared to be to a certain extent a failure, as a preventive of smallpox, in this country.

Vaccination is preventive of smallpox. In order that you may understand what smallpox was prior to the introduction of vaccination, thus enabling you to judge of the magnitude of the boon conferred on humanity by its discovery; in order, also, to assist you in removing the prejudices and practical obstructions likely to be met with in practice, it will be advisable to mention a few of the principal facts and statistics bearing on this interesting subject.\*

The mortality from the smallpox was formerly something awful, something almost inconceivable. In Sweden, for instance, in the twenty eight years before the introduction of vaccination, the deaths from smallpox were 2,050 per annum for every million of the population. Contrast this with the history of smallpox in Sweden forty years after, when the deaths amounted to only 158 per annum for every million of the population. The benefit of vaccination is obvious from these figures. In Westphalia, between 1776 and 1780, the death-rate from small-pox was 2,643 for every million inhabitants; but between 1816 and 1850, during which vaccination was established, it was only 114. In Copenhagen, in the last fifty years of the last century, the deaths were 3,128 per annum for every million inhabitants; but in the next fifty years (from 1800 to 1850) the number was 286. Take, again, the experience of the Royal Military Asylum. Out of 5,744 boys who have passed through this institution during forty-eight years, only four deaths have taken place from the smallpox, and those were unvaccinated cases.

The natural history of smallpox, in undisturbed and in unprotected communities, may be summed up in a very few words. Of

\* See the Blue-book on Vaccination, published in 1857, and which contains an elaborate, eloquent, and almost exhaustive account of vaccination from the pen of Mr. Simon.

every 100 persons attacked about 35 die. But the mortality is much greater in the case of young children than in the case of old persons. In the case of children under five years of age, out of every 100 attacked 50 will die. From the age of five to ten, out of every 100 attacked 27 will die; from ten to fifteen, 23 will die; from fifteen to twenty, 26 will die; from twenty to twenty-five, 40 will die. And after this period the percentage greatly increases; so that from twenty-five to thirty, 45 per cent. will die; from thirty to thirty-five, 57 per cent.; from forty to sixty, 69 per cent.; and between sixty and ninety the mortality is 75 per cent. So that in the cases of very young and very old persons smallpox is peculiarly fatal. Of 2,654 patients admitted during sixteen years into the Smallpox Hospital, affected with smallpox and unvaccinated, 996 died—*i. e.*, 37 per cent.

But it is not simply that smallpox kills—this is not the extent of the evil. Among those whom it permits to recover, the conditions left are in many cases distressing in the extreme. Blindness is very frequently the result of smallpox. Then there is the disfigurement by scars—the destruction, the total destruction in many cases, of the good looks of the patient; and lastly, the general health is frequently profoundly shattered by a bad attack of smallpox. So that not only does smallpox kill thirty-five per cent. of those whom it attacks, but it frequently produces effects in those who recover from which every one would be desirous of escaping.

*How far does vaccination prevent this evil, and in what degree?* Dr. Woodville's evidence, given before a commission appointed by Parliament to inquire into the subject in 1802, was as follows: "Within the two years, 1799 to 1801, 7,500 persons were vaccinated at the Smallpox Hospital, of whom about one-half were subsequently inoculated with smallpox matter, and in none of them did smallpox produce any effect." This is a remarkable, and in the history of vaccination, an old fact. But there is another more recent and still more remarkable which I have to bring before you.\* In the public institutions of this metropolis there are vaccinated annually about 20,000 individuals, and it is natural to suppose that a very large majority of smallpox patients belonging to this class of the community would be admitted into the Smallpox Hospital. But it has been found that there have been admitted into this hospital only about nine individuals per annum of those who have been vaccinated at the public institutions of the metropolis, and consequently, only one individual in 2,108 thus vaccinated has become a patient of the Smallpox Hospital. Of those who have been so vaccinated, what is the number of deaths that have taken place in the Smallpox Hospital? There has been only one death in 36,000. It is reasonable, therefore, to infer that in this metrop-

\* This fact was stated by my friend, Mr. Marson, in his most valuable paper, "An Analytical Examination of all the Cases admitted during Sixteen Years at the Smallpox and Vaccination Hospital, London," vol. xxxvi. of the Med.-Chir. Transactions.

olis in the case of properly vaccinated persons the chances are nearly 30,000 to 1 that they will not die of smallpox, and that the chances are not far short of 2,000 to 1 that they will not take smallpox at all. The metropolis has been badly protected, many of the inhabitants never having been vaccinated at all, and there is thus always a soil adapted for the growth of the disease. In districts where vaccination has been universally practiced, smallpox is unknown, except in the case of individuals bringing the disease with them from other places into the locality. Facts in abundance are available in support of this statement.

We have next to inquire—*Is vaccination, well or indifferently performed, and of various degrees of intensity, equally protective against small-pox, or against death from small-pox?* This is a most important question, and one which the facts that have only of late years come to light, render peculiarly interesting. The following very remarkable facts observed by Mr. Marson\* bear directly upon it: During the sixteen years ending 1851, there were admitted into the Small-pox Hospital 3094 individuals protected by vaccination. There were 1357 persons with one cicatrix; 888 with two cicatrices; 274 were admitted with three cicatrices, and 268 were admitted with four cicatrices. The mortality in these different cases was as shown by the following figures :

		Mortality per cent.
With 1 cicatrix, 1357 cases	{ Good..... 768 .....	4.23
	{ Indifferent... 589 .....	11.95
" 2 cicatrices, 888 "	{ Good..... 608 .....	2.68
	{ Indifferent.... 280 .....	7.29
" 3 cicatrices, 274 "	{ Good..... 187 .....	1.63
	{ Indifferent.... 87 .....	2.32
" 4 cicatrices, 268 "	{ Good ..... 202 .....	0.99
	{ Indifferent.... 66 .....	0.00

It requires but a very slight inspection of these figures to see the relation which subsists between the goodness and intensity of vaccination and protection from death from small-pox. In the 768 individuals who had only one good cicatrix, the deaths were four out of every hundred ; and of those who had an indifferent cicatrix, the mortality was eleven per cent. When two cicatrices were present, the mortality came down very much—from four to two, but still it was higher in those who had indifferent cicatrices than in those that have good ones, in the proportion of 2.68 to 7.29. With three cicatrices the mortality is still reduced, being 1.63 with good, and 2.32 with bad cicatrices. With regard to those admitted with four cicatrices, the number of deaths was excessively small, not one in a hundred. There were some individuals who were worse off even than those with one cicatrix—viz., those who had been vaccinated, but who had no cicatrix at all. Of these there were 290, and the mortality amongst them was 21.73 per cent. Mr. Marson finally states in reference to the statistics—"Test the

\* Med.-Chir. Transactions, vol. xxxvi.

question in which way soever you will, the result is in favor of producing four vesicles at least at vaccination." The confluent form of small-pox appears to affect most those with few cicatrices.

The power of vaccination to prevent those attacked with small-pox from dying of the disease, is thus in direct ratio to the goodness and efficiency of the vaccination; for it results from Mr. Marson's very valuable observations, that of the whole number of individuals attacked with small-pox and previously vaccinated, seven per cent. die; of the badly vaccinated, fifteen per cent. die; but in well vaccinated persons—understanding by the term "well vaccinated," those having four or more cicatrices, the mortality is less than one per cent.

Recently the results of some very important inquiries as to the method in which vaccination is practised in different parts of England have been published.\* The reports of these inquiries, made respectively by Drs. Seaton, Stevens, Sanderson, and Buchanan, furnish information particularly interesting at the present moment; and in relation to the question as to the protective power of good and bad vaccination, my friend, Dr. Buchanan, in the course of the last year, examined, under the direction of the Board of Health, a number of children. Some of the results obtained I will now mention. Dr. Buchanan, for instance, examined in the schools of certain unions in the country, 15,041 children indiscriminately: 185 of these bore the scars of small-pox—1 in every 81; 12,860 out of the 15,000 had been vaccinated, and only 12 of these, or 1 in 1000 had the scars of small-pox, being only 0.10 per cent. of the whole number. Taking the 2804 children who were unvaccinated, 171 were scarred, or upwards of six per cent. With reference to the 12 individuals who had been vaccinated, and were found scarred, the vaccination having failed to a certain extent, there was only 1 who had three good cicatrices; 3 had each three very bad cicatrices; 1 had two passable cicatrices; 1 two bad ones; and 6 children had only one cicatrix, in which the quality was bad. Thus 11 out of the 12 children who had been vaccinated and took the small-pox, had been inefficiently vaccinated. These facts are in remarkable agreement with the results of Mr. Marson's observations as to the history of small-pox occurring after vaccination, and they prove uncontestedly the great protective superiority of good over bad vaccination.

*Is the protective power of vaccination affected by lapse of time?*—This is a most interesting question, involving as it does the decision as to the necessity or otherwise of *revaccination*. It would appear that after the lapse of a certain number of years the protective power of vaccination has a tendency, more marked in some individuals than others, to wear out, and a resusceptibility to small-pox arises. The history of revaccination lends support to

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\* Fourth Report of the Medical Officer of the Privy Council. Ordered by the House of Commons to be printed April 11, 1862.

this view, which is, as Dr. Budd has recently very justly observed, supported by what physiology teaches in reference to the change and renovation of the body, it being the fact that about every seven years the body is physically completely changed and renewed.

Some statistics as to the history of revaccination in the Prussian Army (from Mr. Simon's work,) must be mentioned in connection with this subject. For many years past it has been the custom to revaccinate every soldier admitted into the Prussian Army. In 1833, the system of revaccination in the army was begun; and in that year the percentage of cases in which the vaccination took effect was 33. The percentage of revaccination success has progressively increased since that time, the percentages each year being represented by the following figures: 33, 39, 42, 46, 49, 50, 52, 54, 57, 58, 57, 58, 60, 64, 64, 61, 64, 69, 69, 69, 70; so that the percentage has increased from 33 to 70 per cent.

These figures prove that in Prussia—a country in which, so far as is known, vaccination is well attended to—the first vaccination has been followed by a resusceptibility to the vaccine disease, which is not represented constantly by the same figure. These statistics lead probably to the view that the efficacy of the vaccine lymph used throughout Prussia has deteriorated in the process of time. The latter is a point which will be specially referred to in the next lecture. But we are now concerned with another question: the possible wearing out of the protective power of vaccination against smallpox by lapse of time. It is reasonable to infer that if a resusceptibility to the vaccine disease be shown to arise in the individual, a like resusceptibility to smallpox will concurrently arise in that particular case; and the impression has been for several years past here gaining ground that revaccination is proper, and even necessary, once or more in the life of the individual. Mr. Marson states that during seventeen years not a single servant or nurse belonging to the Smallpox Hospital has taken smallpox, and the universal custom has been to revaccinate the servants, nurses, and attendants in or about the hospital on entering on their employment at this institution. It does not appear that the goodness of the first vaccination necessarily extends the limit which time usually places on the vaccination as protective from susceptibility to the vaccine disease; in other words, an individual well vaccinated at first may be found as liable to take the vaccine disease after the lapse of twenty years as one imperfectly or badly vaccinated. *For the time,* and probably in by far the majority of individuals, good vaccination is almost absolutely protective; but after the expiration of a time, which appears to vary in different individuals, which is influenced by idiosyncrasy or some unknown cause, a resusceptibility to the vaccine disease—and probably also consequently to the smallpox—arises, whether the primary vaccination have been good or bad. If the effect of good primary vaccination wear out in course of time, *à fortiori* must the effects of bad vaccination wear out pro-

portionately sooner. The conclusion to be drawn as to revaccination is, that revaccination should be performed at the age of puberty, and perhaps again at the age of twenty-five or thirty, and that it is desirable also to revaccinate at other ages than these during epidemics of smallpox, and especially in the case of individuals likely to come into contact with smallpox patients.

*History and nature of vaccination.*—For a full account of the early history of vaccination, and of the manner of which, step by step, our countryman Jenner arrived at a discovery which is emphatically *the* discovery of modern times, I must refer you to the numerous works on the subject, and especially to the Report on Vaccination, by Mr. Simon before alluded to. Time will only allow me to remind you of the chief facts. Jenner performed his first vaccination in 1796, the subject of the operation being a boy aged eight. This child was afterwards inoculated with smallpox without effect. In 1798 Jenner published his essay on the subject. In 1801 six thousand individuals had been vaccinated; and Parliament voted Jenner the sum of £30,000 in recognition of the importance of his discovery.

The disease known as the vaccine disease, and which is witnessed on the udder of the cow, is in reality the smallpox affecting the animal. In this country, Mr. Ceely, of Aylesbury, and Mr. Bradcock, of Brighton, have proved that this is the case by inoculating cows with smallpox; and well marked vaccinia has thus been produced. From cows so inoculated individuals have been vaccinated, the results being identical with those of vaccination with matter as ordinarily obtained from the cow. It is probable that if these facts had been known at the time Jenner made his discovery, much of the prejudice which he had to encounter would have been removed. Individuals had an objection to taking the disease of an animal, but there would naturally be less objection to taking a disease the identity of which with smallpox had been proved. Jenner surmised that it was so, as is evident from the name which he gave to the disease—"variolæ vaccinæ." The vaccine disease, then, is the smallpox which has passed through the cow, and which has, in so passing through the cow, become so modified that, when reconveyed to the human subject, it gives rise to a disease of exceedingly slight intensity, but which nevertheless is still the smallpox. For a full account of the vaccine disease I must refer you to the ever-to-be quoted paper in the "Transactions of the Provincial Medical and Surgical Association," vol. viii., by Mr. Ceely, of Aylesbury.

In the next place, we must consider *the phenomena produced by vaccination in the human subject*. The necessary outline of the subject now to be given must be completed by actual inspection and comparison of vaccinated cases, opportunity for which is afforded you at an adjacent public vaccination station. This practical study of the subject is absolutely essential.

*Vaccination for the first time.*—After the arm has been punc-

tured, and the vaccine lymph introduced, the first effect is identical with that which would be observed if the lancet had been uncharged with lymph; it so remains during the next two days; and it is only on the third day, or towards the end of the third day, that appearances are observed about the wound of an unusual character. It then becomes red and slightly elevated. On the fifth day the cuticle covering this little red spot is elevated into a small pearl-colored vesicle: and this vesicle evidently contains a fluid. The vesicle varies in shape according to the shape of the incision made—it is round if a simple puncture be made; it is oval if there has been a small incision in the skin. On the eighth day—that is to say, at the close of the seventh day—the vesicle has become much larger; and it is then in perfection, as it is termed. The margin of the vesicle is turgid and elevated; the color is now somewhat yellow, not quite so transparent as it was, and on close inspection, it is evident that the vesicle is cellular, and divided by septa, there being from ten to fourteen cells in each vesicle. Moreover, the vesicle is what is termed umbilicated, having a depression in the centre, over which part there is no elevation of the cuticle into bladders. After the eighth day there is formed what is termed the areola, the skin around the vesicle becoming red, sometimes of a deep red tinge; the surface of this areola becomes tense, hot, and at the same time painful; the areola is usually circular. If the points of vaccination be close to each other, there will be a large red spot surrounding the whole, extending sometimes a considerable distance up and down the arm. An occasional but very rare result, and one which appears to be connected with the use of bad lymph, is inflammation of the cellular tissue of the arm. The glands of the neck and armpit are usually slightly swollen. During the eighth and ninth, or even tenth day, the increase in the size of the vesicle goes on. It is extremely important that the two things—the perfection of the vesicle and its greatest size—should not be confounded. The vesicle is in perfection on the eighth day; but it is at its largest size on the ninth or tenth day. On the eleventh day the vesicle begins to fade, the lymph within becomes absorbed or the vesicle breaks and it is discharged, and a scab forms, which becomes hard, dense, firm, and black, and finally falls off at a time which varies from the eighteenth to the twenty-first day after the performance of vaccination. There is left behind it a cicatrix, which is quite indelible if the vaccination be efficient. Such is the course of the disease normally.

Occasionally there is observed what is termed “retardation” of the disease, and this may take place up to sixteen days, possibly even later. The arm does not “take” so early as it should do, although the disease, after it has begun to take, may go through the same course as that ordinarily observed. On the other hand, a too early taking of the vaccination indicates irregularity, and is usually due to some defective character of the lymph used.

*Secondary vaccination.*—As a rule, when vaccination has once been performed, the individual is no longer susceptible to the *regular* vaccinia. The effect of the vaccination is, under these circumstances, that irritation is set up analogous in *kind* to that observed in primary vaccination, but the disease sets in quickly, the redness often beginning immediately after the operation; the vesicles are imperfect; there is little evidence of presence of fluid; the duration of the effect is only five or six days (although variations in this respect may be noted), and the scar left behind is correspondingly small, and wanting in the typical characters. In quite exceptional cases the secondary vaccination takes perfectly, and the course of the second vaccination is more nearly identical with that of the first. These cases, in reality, resemble those in which has been observed the occurrence of small-pox after good vaccination.

*Characters of the cicatrix following good vaccination.*—It is important that you should be aware of the characters of a perfect scar, and note them accurately. The scar resulting from good vaccination is usually circular; it is radiated, indented, and foveated, having a number of little pits upon its surface; and it has a well defined edge. Good cicatrices are generally of a considerable size. The size of a typical scar, such as would be observed after vaccination by the puncture of a lancet, which is the ordinary method, is that of a three-penny piece—just five-eights of an inch in diameter.

Now what are the characters of a defective scar? A defective scar is more or less wanting in all the characters mentioned. It is comparatively smooth; without indentation; without the little pittings; the edges are irregular and ill defined, and it is often very small.

Lastly, with reference to the phenomena of vaccination as ordinarily observed. Up to the seventh or eighth day the child is perfectly well, but there generally set in at this time some constitutional disturbance and signs of irritative fever. This varies in degree in different cases; it is sometimes considerable.

It need hardly be observed that the wound inflicted by the vaccination is, like other wounds, liable to be affected by injurious conditions of the surrounding atmosphere. Pyæmia may follow the use of bad lymph; erysipelas has in rare instances been observed. Ordinary care is sufficient to prevent such evils.—*Lancet*, June 13, 1863.

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*Disease apparently congenital.*—1. *Ordinary asthma. Exciting cause. Symptoms. Remedies.*—2. *Hay-asthma. History of the case. Description of a paroxysm.*—3. *Cat-asthma. Asthmatic symptoms. General and local symptoms. Nature of the affection.*

I have every reason to believe that I have been subject to an asthmatic affection from the time of my birth, and that my asthma

is constitutional or congenital; the recollection of my earliest years is associated with much suffering from it. As well as my memory serves me, at the youngest period of life it was at the worst, and has gradually diminished up to the present time. In childhood I do not know that I was ever entirely free from it, that is to say, I could never take a deep breath without a wheezing sound, but now, except when suffering from attacks, I am free from the least trace of it; notwithstanding it was then, as it is now, almost entirely under the influence of exciting causes.

*Exciting causes.*—These are numerous, dissimilar, and some subtle and unaccountable; they are chiefly these: Cold, change of air, a recumbent posture, laughing, coughing, sneezing, bodily exercise, hay-fever, and, what is decidedly remarkable, the proximity of a common domestic cat. Several of these causes are secondary to others, and cannot be easily distinguished; for instance, I do not know that a recumbent posture would, or moderate exercise would ever produce a paroxysm without a present tendency from the effect of cold, an unfavorable air, etc. The two last in the above catalogue of causes I shall consider separately—hay-fever and the cat-asthma; the first of these is entitled to this distinction because it is invariably accompanied by other symptoms, asthma being only one among many peculiarities equally conspicuous; and the last on account of its singularity.

I shall now describe my common asthma, that is, my asthma exclusive of that produced by hay-fever, or the proximity of a cat.

I was an exceedingly delicate child—pale, thin, weak, sickly-looking, and cadaverous. Besides asthma, a foe ever present or near, I was subject to sore throat, bronchitis, swollen glands in the neck, enlarged tonsils, Eustachian tube deafness, headaches, and habitual wakefulness at night, a variable appetite, and an inability to stoop my head low, from a feeling of sickness which it invariably produced; I was debarred from the natural and healthful sports of childhood, for I could neither run nor laugh heartily without danger of a suffocating paroxysm of temporary asthma. At the age of twelve or thereabouts, I went to reside at a school at Salisbury, where the inland air, and probably the regular mode of living, produced a total disappearance of all these symptoms of delicate health, and I became stout and strong, and my appearance remarkably healthy and robust. During this time I do not remember to have had one paroxysm of asthma, or that my sleep was at any time disturbed by it, nor on my return home for the vacations, on finally leaving school do I remember any recurrence of it. But two or three years after I had left Salisbury, my general health still remaining excellent, I remember I was perpetually distressed and burdened with *tightness of breathing* (to use an expression that seems to imply the sensation), to a degree and with a frequency sufficient to destroy my comfort. Thus, in my early life, my health was bad and my asthma severe; at Salisbury my health was excellent and my asthma was gone; subsequently, my health

remaining good, my asthma returned. So stands the case as bearing upon the question whether a good or bad state of general health has an influence on the asthmatic tendency, and the inference to be drawn from the facts, considering the possible influence of other exciting causes, is involved in much uncertainty.

In my case the most prominent and frequent of all the exciting causes is, what is commonly called *taking cold*, and this acts either directly, when the asthma becomes the immediate consequence, or remotely through the intervention of inflammation or congestion of the lungs, when the asthma comes on later. As it regards the first, if I walk in the garden when the air is damp and chilly, in ten minutes my breathing becomes sensibly affected. At night, if my dress is not securely closed in front, or the bed-clothes well adjusted about my neck and shoulders, a certain degree of asthma presently ensues. It has sometimes happened that I have fallen asleep without having made these necessary arrangements, and the consequence has been, that I have awoke with a fit of suffocation, which, after the removal of the cause, has subsided in the ordinary way. The asthma consequent on cold on the chest (bronchitis) is of a most painful and distressing kind; unlike that produced by cold directly, it often lasts for days. In my childhood I suffered grievously from it; I can remember, when I was very little, spending hours at a time on a footstool, with my head on a chair, as the best means of obtaining rest, together with ability to breathe. But it has frequently happened, at all events of late years, that I have had very severe colds, attended with soreness of chest and expectoration, without any concurrent asthma.

Another of the primary causes of asthma with me is change of air. That this produces my asthma I know from the fact that attacks have often occurred for the first few days or weeks after arriving at a place where, during a former residence—and, subsequently, when the effect of the change had passed off—I was as free from all trace of the complaint as I have ever been.

The remaining exciting causes—a recumbent posture, laughing, coughing, sneezing, bodily exercise—I call secondary causes, as I cannot be sure I have ever suffered from any one of them without being at the time in a condition of tendency to asthma from some primary cause. So great is the influence of laughing to induce asthma that I have always been obliged, especially in childhood, to avoid it as much as possible on account of its distressing consequences. Coughing, though a symptom of the complaint, is also a source of aggravation, and, when there is no appearance of asthma, is sufficient to call it into existence. A violent fit of sneezing in the summer will produce asthma, otherwise not. I have always suffered from the effects of bodily exercise, especially in childhood; but even at my present age I cannot run a considerable distance, or jump a child, or skip with a skipping-rope, without the occurrence of some asthma.

*Symptoms.*—Not the least interesting part of this subject is the

form of my asthma—its conditions and symptoms—which I shall endeavor to describe. The difficulty of breathing that characterizes it may exist either as a paroxysm of suffocation or a continuous feeling of tightness and impediment: this last may continue for days or weeks, with some variation in degree, and prevails during damp seasons, and the influence of hay-fever. The paroxysm is attended with a wheezing sound, more or less audible, but this only occurs when the paroxysm is about to diminish; at the commencement and throughout the worst there is no sound which can be perceptible to any one but myself, as on listening, I can only hear a faint long sigh, such as I should imagine would be produced by blowing through a sieve. At this time the visible signs are, a distressed expression of face, open mouth, elevated shoulders, and somewhat of heaving or gasping—all these in proportion to the degree of spasm. Presently a change ensues, the wheezing sound commences, the attack then becomes more distressing to observers, but less so to the patient. Apparently a looseness of the mucus follows the commencement of sound, which mucus continues to present itself at the top of the trachea, and to be disposed of in the ordinary way, even after the sound which gradually becomes fainter, has ceased altogether. The lungs then resume their former normal condition; but an occasional deposit of mucus, and a necessity of clearing the throat, will occur at intervals for some time after, but not long, if the spasm is produced by some sudden and violent exciting cause, and does not indicate an asthmatic condition. The *continuous* form of asthma which I have noticed is but a mild and continuous phase of the other, but is always indicative of a liability to spasm from any secondary cause. It is unattended with sound, except on making a deep expiration, which, if performed, is immediately followed by a cough, or inclination to cough; but during the whole of the period the mucus continues to be abundant, impeding the voice, and requiring to be perpetually removed. This deposition of mucus is one of the most characteristic features of the complaint. I believe no asthma, however slight, exists without this concomitant (of course I am understood, here and throughout, to be recording only my own experience), for which reason I am always careful to avoid laughing before singing; for though the asthma thereby produced may not be perceptible, the subsequent impediment by the production of mucus indicates some previous asthmatic affection.

There are two peculiarities to which I have not yet referred—the asthmatic headache, and an itching sensation about the chin, the middle part of the chest, and at the back between the shoulders. This headache is never present except in a violent paroxysm, with which it subsides, commencing after the difficulty of breathing has existed for some little time. Such headaches do not accompany all violent paroxysms of asthma, but are of rare occurrence; still they are so peculiar and characteristic as to be entitled to rank among the symptoms of asthma. They are unlike any other headaches,

unaccompanied by nausea, and consist of an acute pain over the brows and in the front part of the head, and a feeling of fulness; they are greatly aggravated by coughing, during which the pain becomes intense. The other peculiarity is as characteristic, but more remarkable; this belongs chiefly to the asthmatic paroxysms, but to which, unlike the headache, it is not entirely confined. I refer to the itching sensation about the chin, the middle part of the chest, and at the back between the shoulders. This itching does not resemble ordinary itching, being of a peculiar irritating character; when very bad it might almost be called *stinging*, and it is impossible to allay it by rubbing or scratching, or to determine the exact part which itches. If the chest be rubbed all over, the itching seems to fly to the back about the region of the backbone between the shoulders, or to the chin; the same occurs with the chin and the back; whenever an attempt is made to remove the itching by rubbing or scratching, if it moves at all, it appears in one or other of the three localities mentioned, and so till the end of the spasm, or till that symptom subsides. The most ordinary is the itching on the chin, and though so little benefit is derived from it, it is impossible to avoid scratching; the nails go up instinctively, and persevere in a vain application of the usual means of alleviation. I shall have occasion to refer to this symptom in reference to the hay-fever and cat-asthma.

*Remedies.*—Of remedies I have not much to say, as I have seldom used any; to speak paradoxically, the best remedies are the avoiding the causes. As taking cold is so frequent a cause of asthma, I have found it of the greatest importance that that should be prevented, and when a cold is the occasion of asthma, the obvious means of alleviation are those which tend to cure the cold. It is essential to me to keep the feet dry, and it is of great advantage to keep the extremities warm, especially during the presence of asthma. As a recumbent position is not the most convenient for breathing, besides being sometimes a direct cause for asthma, I sit upright during the paroxysm, or, in case of fatigue, lean forward, resting my head on a table, or on something placed upon it of a convenient height. I have never been obliged to have recourse to emetics for asthma: I have taken antimony with very great advantage as regards the difficulty of breathing. As well as I can remember, all the symptoms of asthma disappeared, but the effect of the medicine was so distressing and so depressing that the remedy was never repeated. I tried smoking tobacco for some little time, and discarded it for the same reason; the alleviation that it afforded was only in proportion to a sensation of faintness and nausea, and a horrible feeling; consequently, smoking was speedily abandoned as a source of comfort. If I had persevered till habit had overcome the painful effects of the poison, I believe smoking the tobacco would have had no effect at all, and would have ceased to be a remedy. I have occasionally had recourse to mild doses of ipecacuanha, and have found it a most comfortable and useful medicine.

There is an instinct in suffering which suggests the immediate requirements of the sufferer, and the natural means of palliation. For instance, in asthma, the next desire after a favorable position of the body is fresh air, cool air, and plenty of it. Frequently when I have been walking in the country, and have been conscious of the presence of some asthma (perhaps principally during the past season), and have been visiting some of the cottagers in their warm close rooms, I have been obliged to escape, from a feeling of actual suffocation, to the open air. For the same reason we see asthmatics with their mouths open, with the aspect of fish ejected from their natural element.

I have now described my case as respects the common asthma, including exciting causes, symptoms, and remedies. It only remains to relate the peculiarities of my asthma as it presents itself during hay-fever, and in consequence of the proximity of a cat; which two subjects, for the sake of convenience, I shall detail separately, and as distinct from the common asthma, though in reality it is but one asthma, and every attack, from whatever cause, and with whatever accompaniments, is consequent on an asthmatic constitution.

#### HAY-ASTHMA.

My hay-asthma differs from the common asthma only in its origin and its accompaniments; it is necessary, therefore, I should describe the malady as a whole, detailing all the symptoms and peculiarities of what is commonly called hay-fever.

It seems resonable to suppose that I must have been liable to hay-fever, at the ordinary season, during the whole course of my life, but till within the last few years I was never aware of its presence, or of the existence of such a malady. From the frequency of my asthma, and common colds in early life, it is probable that a recurrence of asthma at a particular season, and the other symptoms of hay-fever were overlooked, and that when I became less generally subject to asthma, the tendency to hay-fever remaining, that complaint more distinctly declared itself; or it may be that of late years I have become constitutionally liable to hay-fever—either more susceptible of the influence, whatever it may be, or have acquired a constitution capable of evolving the symptoms.

The period of the commencement of the hay-fever, and the length of its continuance are very variable, being never exactly the same two years following; for one or two seasons, not long since, it did not make its appearance at all, or was so slight as to be scarcely perceptible. Speaking generally, I begin to perceive it about the middle of May, and it ceases about the middle of July; but I have observed that this depends somewhat upon the forwardness of the season, and the progress of vegetation.

That which distinguishes my case (as I suppose) from the ordinary cases of hay-fever, is that the asthma is the most conspicuous

feature. During the period of hay-fever there is always a liability to spasm from an exposure to the influence, or there may be, for a part or the whole of the period, a slight but continuous asthma, and a liability to paroxysms from any secondary cause. I have suffered most from paroxysms while taking country walks, walking through grass meadows, and especially in one particular garden surrounded by fields. The prevalence of the influence in this locality is very remarkable, as there is nothing peculiar in the neighboring soil or its products. I know one other locality where the influence is still more excessive; here there is abundance of flowering grass and rushes, the region is flat, the soil marshy, and in the neighborhood there is a great variety of indigeneous vegetation. If the influence arises from the grass, it is not necessary it should be cut and dried, that is to say, the proximity of *hay* is not essential.

The paroxysm generally commences with sneezing, which continues as long as the operation of the influence which produces the spasm. The sneezing appears to be the most readily produced of any of the symptoms, and results directly from the influence; it is of a peculiarly irritating character, and greatly aggravates the asthma; it is followed and accompanied by a stinging, itching feeling in the nose, an irritability all over the skin of the face, a watery condition of the eyes, and consequently of the nose. I have frequently returned from a walk with my handkerchief as if it had been dipped in clear water; the eyes become injected, the *carunculae lachrymales* more or less swollen, and the face wears somewhat the same appearance as during a severe cold. When the paroxysm has continued for about an hour there ensues a feeling of disarrangement about the upper part of the throat and palate and back of the nose, as though the whole of that region were mashed up together, so to speak, and had become swollen and undefined. This condition is frequently accompanied by an itching sensation in the Eustachian tubes, which induces a desire to move the back of the tongue, or to thrust the fingers into the ears, so as to allay the itching, but as the part affected cannot be reached, the itching can scarcely ever be alleviated. If this condition of the throat and palate continue for some time, perhaps about an hour, there ensues a feeling of soreness in the throat and chest, as in the case of a common cold. There is, during the whole of this period, a feeling of general irritability; on such occasions the tickling of a hair, the blowing of the wind, any inconvenience or disarrangement of dress, the hitching of brambles, all interference, weight, or incumbrance, become quite intolerable. But the most conspicuous symptom is the asthma, which must always continue longer than the sneezing, since sneezing on such occasions always produces it, and when it has reached the worst it takes some time to subside. The asthma during these paroxysms is violent, with a feeling of tightness and suffocation; it is accompanied with a wheezing sound, and is followed by much mucus.

These paroxysms of hay-asthma always exhibit the peculiar phenomenon of the itching of the chin; this itching, unlike the other symptoms of the hay-fever, is attendant only on the asthma, and belongs exclusively to it.\* After all the symptoms have mostly subsided, which, if the paroxysm occur in the evening, seldom happens entirely before sleep, the throat remains sore, at least in appearance, being red and vascular; the edge of the palate is very red; and the parts contiguous somewhat swollen and undefined, and there is considerable mucous exudation. Always after these attacks, there remains for some little time a liability to asthma from every slight cause, and an inclination to the short asthmatic cough. The asthma may recur on lying down in bed and disturb the early sleep, but this with me is not of common occurrence. During a good night's rest all is set to rights, and every symptom disappears, except those appearances which, were I not aware of the circumstances, would lead me to suppose I was recovering from one of those severe but short colds to which I am subject in the summer time;—the face is somewhat pale, the eyes stiff and injected, with considerable enlargement of the *carunculae*, which are somewhat encumbered with that kind of inspissated mucus which nurses call “sleeping dust.” The throat is sore, and there is a degree of stiffness and swelling about the palate and tonsils, and the lymphatic glands beneath the jaw frequently appear swollen and distinct, and feel about the size of acorns. If the paroxysm on the previous evening has been long and severe, there is a feeling of languor and debility, but this and all other indications disappear as the day advances.

I have had attacks of the hay-fever more frequently in the evening than at any other part of the day,† but I believe that this results solely from the circumstances that evening is the time for walking in the summer.

The remedies for these paroxysms which I have tried, if remedies they may be called, are very simple. The best treatment is to use the means which inclination dictates, and then to wait with patience till the symptoms subside. If an attack occurred in the evening, having provided myself with a perfectly dry handkerchief, and being comfortably and warmly dressed, I should sit quite still, half-reclining in a chair, in a room with the doors and windows closed, and so remain in stillness and rest, avoiding, if possible, coughing and scratching the chin, till I felt able to attend

\*This differs from the experience of a lady, an acquaintance of mine, who is a victim of hay-fever, and who, although her hay-fever symptoms are quite free from any admixture of asthma, suffers grievously from this itching of the chin and between the shoulders, so that, to use her own expressions, “she could tear the inside of her chin out.”

†This is not always the case with hay-fever; the morning is often the worst time. In the case of the lady referred to in the previous note, an attack invariably comes on from five to seven A. M. The source of these early attacks appears to be the first bright light of the summer sun.

to some quiet employment, and then wait for sleep to complete the cure. If the attack occurred in daytime, I should in addition be careful to exclude light and noise. Light is particularly disagreeable and hurtful during attacks, but apart from this it is always comfortable on such occasions to shut the eyes.

This includes all I have to say respecting acute hay-asthma. The other phase of hay-fever is that slight continuous asthma which prevails frequently during the first half of summer, together with a frequent itching of the chin. This chin-itching is so conspicuous a feature in hay-asthma, that it may be considered a characteristic symptom, although it is by no means confined to that form of asthma which is produced by hay effluvium.

#### CAT-ASTHMA.

This singular phenomenon is, I imagine, almost peculiar to myself: I never heard of a similar instance, except in the case of one individual, a near relative of mine, who is subject to the same affection, only in a less degree. The cause of this asthma is the proximity of a common domestic cat; the symptoms are very similar to those of hay-fever, and, as in the case of hay-fever, are occasioned by some sudden influence inappreciable by the senses. I cannot recollect at what time I first became subject to the cat-asthma, but I believe the liability has existed from the earliest period of life. I believe some asthma would present itself if I were sitting by the fire and the cat sleeping on the hearth-rug; but the effect is much greater when the cat is at the distance of one or two feet, or still closer; it is still further increased by the raising of the fur and moving and rubbing about, as is the habits of cats when they are pleased, also by stroking their fur; but most of all when they are in the lap just under the face. The influence seems to be stronger in kittens from two months old and upwards than in full-grown cats. Having been almost always accustomed to cats, I have had abundant opportunity of testing the peculiarities of this singular phenomenon.

With respect to the symptoms, I have only to say they closely resemble those of hay-fever, with only such difference as might be expected from the near proximity of the cause, from its defined and local nature, and also for the facility for its entire and immediate removal. The paroxysm is consequently generally more violent than that of hay-fever, and the symptoms are not allowed to go through their regular course. The asthmatic spasm is immediate and violent, accompanied with sneezing and a burning and watery condition of the eyes and nose, and excessive itching of the chin, which may also extend to the chest and between the shoulders; the eyes are injected, and instinctively avoid the light, and the caruncles are more or less enlarged. I believe if the cause were suffered to continue, all or most of the other symptoms of hay-fever would ensue, only with a more excessive and conspicuous asthma. After the removal of the cause, the symptoms I

have described begin immediately to subside, and if the paroxysm is not very severe, the cure is effected in five or ten minutes, leaving, as in all other cases of asthmatic spasm, a tendency to mucus at the top of the windpipe, which being repeatedly removed in the ordinary way, the last symptom disappears, and the lungs and throat resume their normal condition.

This includes all I have to say respecting the cat-asthma; but I shall here notice the evidence of the more general influence of cats on my system—of the existence of what I am disposed to call cat-poison. I mention this partly because of its singularity, and partly because the symptoms arising from this general influence are often co-existent with those of cat-asthma, and are only occasioned by a different application of the same cause as produces, by its application to the respiratory surface, the asthmatic spasm.

The symptoms of this poisoning are consequent on touch or puncture. The eyes, lips, and cheeks are susceptible of the effect of touch, but a puncture of the claw affects equally any part of the surface of the body. The eyes are more readily affected than the lips, and the lips than the cheeks. I have often known the eyes and the lips most painfully affected by being touched by the fingers after handling a cat. That such a result may be produced by such a means proves very strikingly the power and subtlety of the influence. The eyes would at all times be affected by this means, but I do not think the lips would, unless there were some little crack or flaw in the skin, from cold or any other cause. The effect on the eye of rubbing it just after touching a cat is to produce a hot, stinging irritation of it, a profuse flow of tears and injection of the whole eye, a tender, painful swelling of the *carunculae* (the sensation is that of painfulness and itching combined), and intolerance of light. If one eye only is touched the other merely exhibits the ordinary effect of sympathy. The result on the lips is an enlargement of the whole lip, and sometimes a sort of lump or protuberance at the part principally affected, together with a feeling of heat and irritation. The cheek is not influenced by this secondary touch, but is affected by the slightest touch of the fur of the animal. If the cat rubs against the face the cheek immediately becomes hot, a little swollen, and of a suffused red; sometimes there appears a defined little protuberance, a something like nettle rash, which I imagine is produced by the puncture of a hair.

The wound from a claw, whatever be its form, is always surrounded by a white, hard elevation or wheal, very much resembling the appearance consequent on the sting of the nettle. The pain, which is very much greater than attends ordinary scratches, is accompanied by a feeling of irritation and itching, like the pain of the scratch and nettle-sting combined.

I must not omit to observe that I have never discovered any trace of such influence in any other animal, with one slight excep-

tion ; a deep scratch on my arms with the claw of a rabbit has, in two or three instances, produced the same sensation and appearance as those above described, only less clearly developed.

The saliva of a cat is perfectly innocent, and a bite with the tooth in no way differs from ordinary wounds of the same character ; in a word I believe the influence is, in its source, exclusively cutaneous.

*Asthma from bronchitis in adult life.—Capricious and curious effects of locality.—Physical signs.—Inoperativeness of all remedies.*

— H., Esq., living near Kidderminster, applied to me in July, 1859, on account of spasmodic asthma. He was quite well up to last October, when he caught a severe cold on his chest, with soreness beneath the sternum, cough, and expectoration, but he did not lay up, nor did he seek medical advice. Finding in the following January that he was getting worse, he applied to his medical attendant, who told him that he had been, and was then, suffering from bronchitis. He experienced, I think, but little benefit from treatment. It was not till February that the asthma showed itself. It came on first in nightly paroxysms, waking him from one to two o'clock in the morning. Finding this new symptom increasing upon him, he consulted Dr. —, of Birmingham, who told him it was spasmodic asthma. Dr. — did him little, if any good. He then went to St. Leonards, and put himself under Dr. —; for some time he got no better, and had his attacks every night ; but one day, he says, something snapped in his left side, and he almost immediately began to mend. Dr. — told him it was a pleuritic adhesion that had given way, and ordered the infliction of mercurial and iodine ointment. For the rest of the time that he was at St. Leonards he was almost entirely well, and fancied himself quite cured. He then went to Malvern, and had not been there ten minutes before his asthma seized him, and he had a very bad attack ; as long as he was there his asthma continued, and he therefore very promptly left. After this he came to London to consult Dr. —, and put up at Wood's Hotel, Furnival's Inn, Holborn, and there was perfectly well. On returning home he was as bad as ever ; and coming to Reading was advised by a medical friend there, to come to town to consult me. Mr. H. is a fine, strongly built, and muscular man, remarkably well "fleshed up." Chest movements good ; percussion everywhere clear without any emphysematous hyper-resonance ; no emphysematous configuration of the chest or back. On auscultating the chest, I find—1, respiration accelerated about twenty-five a minute, I should think ; 2, expiration a little prolonged, post-expiratory rest almost lost ; 3, respiratory murmur not loud anywhere, but at the apices, and below and behind, decidedly deficient ; 4, on forced respiration these parts are found to be the seat of very slight emphysematous crackling, the latter also of a little rhonchus

and sibilus; forced respiration everywhere else gives the normal puerile sound.

The patient goes to bed well every night, at one or two o'clock he awakes up with, or rather is awoke by, severe dyspnoea, and obliged to assume the erect position. After an hour or two the difficulty of breathing gradually subsides, and before it is time to rise he is able to fall back and get a little sleep; but he finds that even these little snatches make him worse, and that he wakes from them with his breathing not so free as when he lay back. He gets up to breakfast, but it is not till ten or eleven o'clock that his breath becomes perfectly free. When I saw him, ten o'clock, that time had not quite arrived. The attack generally goes off with a little expectoration. For some time, for some weeks, I think, he had, besides these nocturnal attacks, a little attack every evening at eight o'clock.

He has taken the following remedies without any benefit: Indian hemp, lobelia, extract of stramonium, camphor, ether, squill, ipecac, and chlorodyne; also the fumes of nitre paper. The thing that he says has done him the most good is a draught containing antimony (not in nauseating doses), ammonia, and ether. He has not tried tobacco, antimony, or ipecacuanha *ad nauseam*, stramonium smoking, nor chloroform.

I ordered him to smoke tobacco *to collapse*, the moment his asthma came on him, the more likely to be easily induced as he has never habituated himself to smoking. -Also to try smoking stramonium. Also to get some of Corbyn's ipecacuanha lozenges, and nauseate himself with them when the attack comes on. Also to hold chloroform over his head as a reserve.

This is a case, as it has not been of long standing, and has inflicted no notable organic mischief on the lungs, of the cure of which I should be sanguine. It is one of the cases having an organic origin, being clearly due to the bronchitis. There is no history of asthma or lung disease in his family. He never had any symptoms of it before.

The situation of his house is evidently high and dry. The air, therefore, from which I should expect the greatest good to him, would be low and moist. Either a mild, relaxing marine air, such as Torquay, Ventnor, Hastings, or London near the river, such as Bridge Street, Blackfriars. Such advice I accordingly gave him.

August 20th. This patient has come to me to-day much worse than when I saw him last, and with a very bad account of himself in the interval. He has been to Ventnor, Southampton, and various other places on the south coast, and has not, I think, had one good night. On the contrary, his nights have been awfully bad, and his attacks have generally come on from six to eight in the evening. The dyspnoea also only imperfectly leaves him by day, so that he is constantly troubled with it, and now, as he is talking, I can clearly recognize it. He spits a great deal more—an evidence and a measure of the increased embarrassment of breathing,

and the consequent pulmonary congestion. He has lost flesh, too, and looks paler and seedy; in fact, he is suffering greatly from want of sleep. As he infers that his recent experience is against a mild and relaxing place agreeing with him, he is anxious to try a bracing one. Accordingly, with my approbation, he is going to North Wales. As he has tried three of Corbyn's ipecacuanha lozenges without any success, I have recommended him to take four or six. I have also advised him to try smoking strong shag tobacco, with the view of producing some nausea.

A week or two after writing the above I heard from this patient that on his way to Wales he had stopped at Leamington, and there had found himself so perfectly well that he had prolonged his stay. He had not had the slightest return of his symptoms.' The hotel at which he was staying, "the Castle," was one at which he had on a previous occasion enjoyed excellent nights, when he could not sleep in other parts of Leamington : and, what is still more curious, it was at this very hotel and in the same part of it that another asthmatic patient, who was invariably ill when he left London, had passed, to his surprise, three excellent nights; in fact, been as well as in town. How long Mr. H—— stayed at Leamington, or what has been the subsequent history of his case, I have not been informed.—*Medical News.*

*Conservative Medicine as Applied to Hygiene.* By AUSTIN FLINT, M. D., Professor of the Principles and Practice of Medicine in the Bellevue Hospital Medical College, and in the Long Island College Hospital.

As the phrase *Conservative Medicine* may be misconstrued, a brief explanation is to be premised. The term Conservatism may be used to express a principle which leads the practitioner, in dealing with diseases, to preserve, develop, and support the vital powers. The unfolding of this principle more and more during the last quarter of a century, has been a result of the progressive increase of the knowledge of the organism in health and disease, together with the accumulating fruits of clinical experience; it is the characteristic of the therapeutics of the present time, as represented by the views of the ablest writers and practitioners, and it is claimed that it should be considered as the governing principle in medical practice. For a fuller exposition, the reader is referred to the previous articles on the subject.\*

The subject of conservative medicine, in the articles just referred to, has been considered chiefly as regards its therapeutical relations. The purpose of this article is to consider the subject in its relations to *Hygiene*. Here, as heretofore, the largeness of the subject is

\* *Vide Am. Journ. of Med. Sciences*, No. for January, 1863.

such that the writer can only aim, within the limits of a single article, to present a few desultory thoughts which may be suggestive, in the minds of his readers, of trains of reflection leading to important practical conclusions.

Hygiene enters alike into the prevention and management of diseases. The name suggests more especially measures concerned in the preservation of health; but, in therapeutics, all measures, not medicinal, may be distinguished as hygienic. I shall use the term with this breadth of application. And it will be a natural division of the subject to direct attention, *first*, to hygiene in health, and *second*, to hygiene in disease. I will adopt this arrangement.

*Conservatism as applied to Hygiene in Health.*—There is no need to argue for the validity of the principle of conservatism as applied to the preservation of health. Hygiene, in this application, can, of course, have no object which does not assume to be conservative. To weaken the powers of life, or impair the constitutional strength, is never the design of measures to prevent disease. The violations of the principle which fall within this division of the subject proceed either from ignorance, or false notions as regards the effects of means supposed to be conservative. Violations of the principle are less frequent and marked now than formerly; the progress of conservative medicine is shown in its prophylactic as well as its therapeutical relations; still, examples of not only past, but present non-conservative errors are not wanting.

It is not many years since the notion was prevalent, both within and without the profession, that there is such a condition as an overplus of health. And it was the custom to resort to potent measures to reduce the exuberance of health within safe limits. Bleeding and purging were employed for this end. There are persons now living who were accustomed, in their young days, to get bled from time to time purely as a sanitary measure. Nothing was more common, a quarter of a century ago, than for healthy persons to apply at the offices of physicians for a venesection, which was performed, as a matter of course, on the judgment of the applicants. Such occurrences are very rare at the present time. Purgation, being practicable without the aid of the doctor, was almost universally employed as a health-preserving duty. Cathartics were regarded as cleansing agents, and not less important for the alimentary canal than soap for the surface of the body. An occasional internal "scouring" was supposed to be even of greater importance than a thorough external scrubbing, for while the latter was enforced chiefly on the score of cleanliness, the former had the additional recommendation of being thought to be essential to the welfare of the system. There are many now in middle life, with whose reminiscences of childhood are associated periodical doses of sulphur and cremor tartar mixed with molasses, given regularly for a series of days, before breakfast, or at bedtime, especially at every recurrence of the vernal season. This was the cleansing mixture for healthy persons of tender age. After this period, the so-called

cooling purgatives, such as the Glauber and Epsom salts, had preference. A person with an excess of health was considered to be on the threshold of disease, and the latter was supposed to be warded off by the timely employment of the lowering, cleansing, and cooling measures just referred to. The popular use of purgatives or prophylactic agents is still sufficiently common.

Gestation is a physiological, not a pathological, state; and since it is by no means a modern discovery that all the needful supplies for the development and growth of the foetus are contained in the maternal blood, a common-sense view of the matter, it would seem, should have led to the conclusion heretofore, as now, that pregnant women cannot well afford to lose blood; yet, a few years ago, pregnancy was supposed, as a matter of course, to call for repeated bloodlettings. The physician who declined to bleed a healthy person desirous of losing blood simply on the score of pregnancy, had often a task in trying to remove the disappointment which his refusal occasioned. Venesection, under these circumstances, was deemed an important sanitary measure. How such an absurd notion arose, I will not stop fully to explain. Briefly, it was a result of theoretical views respecting inflammation, views which led to the conclusion that the great source of danger, as regards the development of disease, was a redundancy of the vital fluid. How different the practical views of the present time, based on the belief that paucity and impoverishment of the blood are conditions often giving rise to, and standing in the way of recovery from, a variety of diseases!

As another example of the violation of conservatism, may be cited the custom with many surgeons, formerly, to prepare the system for important operations by lowering the powers of life. For this end, a course of purgatives, a system of reduced diet, and sometimes a venesection, were deemed important. This custom does not seem to be entirely exploded at the present time. In like manner, if there were good grounds to expect the speedy occurrence of any disease, as, after exposure to contagious fevers, during the period of incubation, a similar plan of impairing health, by way of preparation for the disease, was considered to be a prudential measure.

Now it may be laid down as a rule of prophylaxis, that, other things being equal, disease is less liable to occur in proportion as the health is perfect and the vital powers high in the scale of strength. This rule may not invariably hold good. Some of the special causes of disease, among those styled zymotic, appear sometimes to luxuriate in vigorous organisms; but if there are exceptions, they do not subvert the rule. If this be true, it is a correlative truth that everything which impairs health or depresses the vital powers, favors the occurrence of disease. Observation and common sense warrant the adoption of the latter truth as a maxim of conservative medicine. Akin to the foregoing rule is another, viz., the system is prepared to endure and recover from

disease in proportion to the previous completeness of health and the degree of constitutional vigor. Without having the statistical data to demonstrate this rule, and without denying the possibility of exceptions, observation and common sense warrant its adoption as a maxim of conservative medicine. Let us, then, inquire whether among the existing notions or customs having reference to hygiene in health, there be not some which are inconsistent with the foregoing conservative maxims. I do not mean to inquire concerning those palpable violations of the laws of health which every reflecting person recognizes as such, and which are common enough. My proposed inquiry relates to false views respecting the means of preserving health or warding off disease; in other words, instances in which persons suppose they are doing right when, in fact, they are doing wrong. It will not be difficult to find examples of this kind.

The wear and tear incident to untiring activity in the pursuits of life first suggests itself. In this country the evils springing from false notions and customs, relating to the exercise of the mental and physical faculties, are enormous. A young man enters upon active life, with injunctions to push his industry to the utmost limit of his capacity of endurance; he is incited to constant exertion by the examples of others; he is stimulated by his ambitious aspirations or a conscientious desire not to be wanting in the discharge of his duties; his position and responsibilities, in the existing state of society, may seem to render excessive and unremitting assiduity imperative. He may or may not violate the laws of health in other respects. If he be regular in his habits, temperate and moral, he is encouraged on every side by approving friends; he is held up as a model for imitation; he looks upon himself with self-complacency; and yet, he is advancing steadily onward, perhaps, to the accomplishment of the great objects in life before him, but with greater certainty to a condition of impaired health, with the mind weakened or disordered, and a proclivity to any disease to which there may be a predisposition. All physicians, especially those who practice in cities and large towns, well know that there is a class of patients who suffer from the want of health, without having any disease which has a place in the nosology. The morbid state in these cases has been gradually induced, and many suffer without appreciating the fact that their state is morbid, and, therefore, without making application for medical aid. They feel a deficiency of their accustomed energy and buoyancy, their interest in persons and things flags, their appetite fails, they lose strength, and they are depressed, without any apparent reason, or by causes which, in a condition of health, would disturb the mind very little. These are the early effects of wear and tear, due to overtasking, not the physical powers alone, but, conjunctively, the mental faculties. Of the cases of chronic diseases, such as tuberculosis, Bright's disease, diabetes, etc., how large is the proportion in which the previous history shows the

existence of wear and tear for a greater or less period prior to the development of the affection? This would be an interesting point for statistical research, but we need not wait for the results of statistics to know that the proportion is large. And of the cases of acute diseases developed in persons suffering from wear and tear, how much of the fatality is due to the diminished power of resistance incident to the antecedent morbid state! How many would probably escape the development of acute disease were it not for this morbid state!

These considerations, while they are of vast importance, should not militate against a proper degree of attention to the objects in life. They do not show that either physical or mental activity is unfavorable to health. The reverse of this is undoubtedly true. As regards the mind, it is not the intensity of the exercise of the faculties which involves wear and tear. It is the long-continued, unrelaxed efforts, accompanied by unceasing anxiety and strain, which tell upon the system. The physician, oppressed by the weight of his professional cares, is well aware that it is not the demand for the operations of the intellect which bears heavily upon him, so much as the pressure of the sense of responsibility inseparable from his duties. It is not the frequency or force with which the bow is bent, but the constant tension, which destroys its elasticity and renders it worthless. Unremitted exercise of the mental and physical powers, although they are not overtaxed, cannot be indefinitely borne; sooner or later the system will break down. Here is a truth difficult to appreciate in its personal application; but every one recognizes it in its application to the physical endurance of inferior animals. A horse, never overworked, and in all respects well cared for, after a time must be turned out to grass. The prudent owner sees this clearly enough, and acts accordingly, while he fails to see that what is true of his horse is not less true of himself. Many persons pursue a course with respect to themselves which they could not pursue, without remorse, toward a beast of burden. It appears to be a part of the egotism inherent in some persons to think that they are so constituted as to bear an unlimited duration of steady work. Next to this is the folly of supposing that the powers of the system, when they give way, may be restored by medication. And when, at length, they find that they are not exempt from the laws pertaining to all animal, as well as human bodies, they perhaps discover, too late, that the influence of habit has rendered continuance of labor essential to happiness. Fortunate are they who, without sacrificing aught that belongs to a proper degree of assiduity in pursuing the objects of life, have taken care to preserve the capacity for healthful recreation!

It is a curious notion, which physicians sometimes inadvertently sanction, that mental and physical exertions are compensatory as regards each other. The man who is overworking the brain, seeks to make amends by fatiguing the muscles. It has occurred to me repeatedly to meet with persons who were devoting too large a

number of hours daily to labor of the mind, and who imagined that this may be done with impunity, provided a certain amount of muscular exercise be added. A lawyer, for example, who habitually devoted ten or twelve hours a day to intense intellectual occupation, became sensible that he was tasking unduly his mental powers, and, in order to fortify his health, moved out of town, and managed to ride on horseback from ten to twenty miles each day. Under the combined effects of the exercise of mind and body, as might be expected, he was losing ground rapidly. It is clear that exhausting mental labors will be longest borne in proportion as the time not thus occupied is devoted to physical, as well as mental, repose; and, on the other hand, that too much physical labor will be less hurtful in proportion as it is not conjoined with activity of mind.

Violations of conservatism, hardly less flagrant, in the hygiene of health, relate to diet. Both the profession and public have been sufficiently alive to the subject of gluttony. The evils of over-feeding, as regards the production of disease, have undoubtedly been exaggerated. The injurious effects of gormandizing habits are mental and moral, rather than physical. So far as health and prophylaxis are concerned, false notions in an opposite direction have been productive of more harm. A quarter of a century ago, dietetic abstemiousness was considered to be the alpha and omega of hygiene. The world was eating too much; hence, the ills that flesh is heir to. So believed not only physicians, but the non-medical health philosophers. The great conditions of health were supposed by many to be the minimum quantity of food with which life could be supported, as little variety in the articles of diet as possible, coarseness in quality, and rejection of most of the accessory aliments. Some advised, as a security against errors of quantity, to regulate each meal by weight.

Vegetarianism had not a few apostles and disciples. We have heard a transcendental reformer contend that in assimilating meat the natural characteristics of the animals were necessarily appropriated; that is, pork communicated to man the attributes of swine, and so of beef, mutton, veal, etc. All the refinements of the art of cooking were deprecated as tempting to over-indulgence.

The sense of taste was deemed a fallacious guide in the selection of articles of diet, and the appetite was so unsafe as a criterion of sufficiency, that the injunction was always to rise from the table hungry.

It was considered a wise course to watch carefully the progress of digestion, so as to ascertain after every meal whether any imprudence had been committed. The subject of dietetics was discussed, not only in medical writings and in intercourse with physicians, but it entered largely into popular literature; it not only pervaded table-talk, but ranked next to the weather in common conversation; public lecturers made no small account of it, and it was not overlooked in the pulpit. In short, the zeal in behalf of abstemiousness

in diet amounted to fanaticism. And dyspepsia was the most common of all ailments among the intelligent and cultivated classes, while it was rare among those who, without thinking of dietetics or digestion, satisfied the appetite with the food placed before them. There is reason to believe that the fanatical notions just referred to, not only contributed to the prevalence of dyspeptic disorders, but favored, in no small degree, the development of other and graver affections, by impairing health and lowering the vital powers.

These notions are by no means yet obsolete either within or without the profession. There are many now who fancy they promote the welfare of body and mind by habits of diet which are incompatible with the highest degree of mental and physical vigor. There are physicians who sanction such violations of the hygienics of health. It is still considered by not a few to be gross and unrefined to eat heartily. Especially with the other sex, it is deemed a ladylike accomplishment to have a delicate appetite, and abstain from the more substantial articles of food. There are fashionable boarding-schools where, as a part of the educational discipline, girls are placed under dietetic restrictions which, in a measure, explain the imperfect development, the anaemia and feebleness of constitution of those who are preparing to become wives and mothers. It is not yet sufficiently appreciated by all, that the *mens sana in corpore sano* is best secured by nutritious supplies abundant and varied; that the healthiest, ablest, and best men and women have been good feeders; that an excess of ingesta over the absolute wants of the economy is not necessarily an evil, there being provisions made for the disposition of an overplus, but none against a deficiency of aliment; that generous living, constituting an important part of the management of certain diseases, *e.g.*, pulmonary tuberculosis, must be also important in preventing their development; that hunger, appetite, and taste were designed to govern dietetics, and are adequate to their office; and that personal experience derived from watching the progress of digestion is extremely fallacious. There is still, therefore, scope for the progress of conservatism in this direction, in order to meet the requirements of existing knowledge and of common sense.

With these few remarks on conservatism as applied to hygiene in health, I pass to the second division of the subject.

*Conservatism as applied to Hygiene in Disease.*—The importance of the hygienic management of diseases has not been, and is not, adequately estimated, for two reasons: *First*, because hygiene in its relations to health has been imperfectly understood and is not sufficiently appreciated; and, *Second*, too great reliance has been placed on medicinal measures of treatment. It is only within late years that the profession has begun to be awake to the vast importance of the study of the laws of health. Sanitary science is yet in its infancy, and claims far more interest and attention than it now receives. The main dependence, hitherto, in the management of diseases, has been on the curative influence of remedies.

That many diseases, under favorable hygienic circumstances, intrinsically tend to recovery, is a fact but recently known and still too little considered. The mind of the physician is too often engrossed with the inquiry, "What drugs shall I give to effect a cure?" and, hence, he frequently loses sight of another inquiry, often of far greater consequence, viz., "What hygienic regulations will contribute to the recovery of the patient?"

This division of my subject has diverse relations. In one aspect it relates to the various hygienic circumstances embraced under the heads of diet and regimen; the latter comprehending influences affecting not only the physical but the mental and moral being. In another point of view, it relates to different diseases, the different stages of disease, and the numerous circumstances which are incidental to disease. I cannot undertake to treat of this more than the former division of the subject with any approach to completeness, or in a systematic manner. I shall only offer a few desultory thoughts, and I will consider first the topic which was last considered in the former division, viz., *diet*.

A striking improvement in the practice of medicine, of late years, relates to diet. Physicians have learned to appreciate, more than formerly, the value of supporting treatment in fevers and other acute diseases, and to regard alimentation as an essential part of this treatment. They have also learned that it is a great object in various disorders and chronic affections to build up the powers of the system, and that this is to be done by conjoining with other measures nutritious food. Has improvement in this direction reached its limit? Is the extent to which alimentation should enter into the management of diseases, fully appreciated? Let us see if there be not ground for answering these questions in the negative.

Limiting attention to acute diseases, it is now generally understood that they do not stand in the way of dying from starvation. Graves uttered a literal fact when he said that patients with continued fever, treated without nourishment, may be starved to death. And this fact is equally applicable to other acute diseases. That a fatal result may take place, and not infrequently has taken place, not from an existing acute disease *per se*, but from inanition, will not be denied. Now it is only an extension of this fact to say that more or less of the morbid phenomena pertaining to the progress of acute diseases are due to a suspension or impairment of the processes involved in nutrition. If patients affected with acute diseases may die from inanition, the latter must play an important part in the production of the phenomena manifested in connection with the diseases; and this must be true of cases which end in recovery as well as of those which terminate fatally. Deficiency of assimilation originates the symptomatic phenomena, in acute diseases, to a greater or less extent, and here is a source of danger in a greater or less degree. In other words, the symptoms which represent the condition of a patient affected with an acute disease,

spring, in part, directly from the disease, and partly from the want of appropriation of fresh supplies for nutrition. Innutrition, in a pathogenetic point of view, has not been sufficiently considered. There is reason to believe that it forms a constant, and often a very important element of all acute diseases; and the practical bearing of this fact is of great importance.

It is fair to presume that the effects produced in a healthy person by withholding food, may also result from the want of nourishment in disease. If starvation be not less fatal in the latter case than in the former, the morbid phenomena, it may be reasonably supposed, are essentially the same in both cases. In order, therefore, to judge of the extent to which the symptoms of disease are attributable to innutrition, the clinical study of starvation in health is important. Experimental observations in inferior animals are not altogether satisfactory, in consequence of the difficulty of appreciating certain symptoms. Nor are the instances of human beings starved from necessity, as in shipwreck, suited to the purpose, because the effects of the want of food are mixed with the moral influences incident to their situation, and, moreover, in such instances, generally, there is a deprivation of water as well as food. Experiments voluntarily made are to be preferred; and of these the best to which I am able to refer are those made by Hammond, to establish the relative nutritive value of albumen, starch, and gum.\* Subjecting himself to the trial of restricting his diet to these alimentary principles singly, Hammond found that they were incapable of supplying the wants of the system, and that the two latter were absolutely innutritious. During each experiment certain phenomena were produced. Now, these phenomena, for the most part, certainly were not produced by the alimentary principle taken, but resulted from the absence of other alimentary principles, or, in other words, from innutrition. These experiments, therefore, may be taken as illustrative of the morbid effects of starvation, effects occurring in disease as well as in health. In this point of view they are not only interesting, but of great value. Referring the reader to the essay for fuller details, I will simply mention the symptoms entering into the concise descriptions by the experimenter.

1. Under a diet consisting of pure albumen for ten days: Febrile movements, heat and dryness of skin, headache, loss of appetite, nausea, abdominal pains, progressively increasing debility, serous diarrhoea, want of sleep.

2. Under a diet of pure starch for ten days: Debility, disturbed sleep, sense of oppression of chest, palpitation, headache, slight scratches of the skin showing tendency to inflammation and suppuration, febrile movement, abdominal pains.

3. Under a diet of gum, which he was able to continue only for

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\* *Vide Physiological Memoirs*, by Wm. A. Hammond, M. D., Surgeon-General U. S. Army, etc., 1863.

four days: Abdominal pains, disturbed sleep, headache, febrile movement, diarrhoea.\*

Can it be doubted that these symptoms occur under similar conditions as regards diet, in the course of disease? And, if so, how often are these symptoms, presenting themselves in the course of disease, referable, measurably or entirely, to innutrition? I cannot dwell upon these inquiries. I must leave them, reiterating the belief that while, under erroneous views, physicians have been accustomed to regard the ingestion of nutritious food during the course of acute diseases as fraught with evil results, more or less of the morbid phenomena supposed to belong directly and exclusively to the existing disease proceed from defective assimilation.

The practical conclusion based on the statement just made is obvious. It is an object in the management of acute diseases not to withhold nutriment, but to promote the assimilation of nutritious supplies. In many diseases this is *the* great object in the management, taking precedence of any known curative remedies. The object always exists, but the extent to which it can be accomplished varies according to the nature and seat of the disease, together with a host of incidental circumstances. The object is the basis of a principle which may be laid down as applicable to the treatment of all acute diseases, viz., alimentation is important to the fullest practicable extent. It is always desirable for a patient affected with any acute disease to take as much food, embracing a proper variety of alimentary principles, as will be appropriated. Inconvenience and evil results may doubtless follow the ingestion of aliment beyond the powers of digestion and assimilation; but the risk of injury from this source, with the exercise of a fair amount of prudence, is less than the liability of harm if, from an excess of caution, the patient suffer from starvation. The minds of physicians have been too exclusively directed to the harm which may possibly be done by overfeeding in acute diseases, and they have overlooked the greater harm of failing to furnish supplies which may be digested and assimilated notwithstanding the existence of disease.

A wide field is opened up by the practical application of this principle. It involves the encouragement of a desire for food instead of the discouragement caused by needless apprehensions. The desire for food may often be developed by judicious contrivances; the appetite may be fostered, on the one hand, or, on the other hand, destroyed by circumstances connected with the selection, preparation, and administration of articles of diet. Giving

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\* For a full account of the effects of starvation on the different organs and functions, and for references to the literature of this subject, the reader is referred to the *Cours de Physiologie*, par P. Berard, tome premier, pages 517 *et seq.* The following quotation, by this author, from Chossat, embraces a fact which has to a great extent been overlooked: "*L'inanition est une cause de mort qui marche de front et en silence avec toute maladie dans laquelle l'alimentation n'est pas à l'état normal.*"

medicines too frequently, and the use of nauseous or nauseating remedies, may do harm by compromising the desire for food and appetite, which their remedial effects will not compensate for. The mental condition may conflict with a disposition to take food, when, if taken, it will be digested and assimilated; this is true of the continued fevers, and other diseases accompanied by a typhoid state. In such cases food is to be given without regard to the desire or appetite; the condition of the digestive organs, and the results of experience from day to day, are of course to be considered. These are some of the numerous circumstances affecting alimentation as a measure of management in acute diseases. I must content myself with this allusion to them. But in passing from this topic, a word or two with regard to the diet of hospitals. This is generally determined by the supposed wants of the system, without much reference to the choice or wishes of the patient. How much good might be done by selecting, preparing, and serving food to hospital patients with a view not alone to the requisite amount and variety of nutritive material, but to develop, encourage, and satisfy desire and appetite! I have often thought if I had unlimited control of the culinary department of a hospital, I would willingly submit to a proportionate curtailment of the articles pertaining to the dispensary.

I cannot find space even to touch upon the various practical points pertaining to the kinds of food suited to the diverse circumstances incident to different diseases; and I will only add, lest some of my readers may imagine what I have written on the dietetic management of acute diseases to be purely speculative, that the views now presented are based not only on reasoning believed to be sound, but on considerable experience. This experience would have been larger were it not that traditional ideas fixed in the public mind, as well as still prevailing in the profession, render it difficult often to carry out an efficient plan of alimentation in private practice; and in hospitals this part of the treatment is limited by circumstances which the physician cannot control. Prejudices, professional and popular, against air and water in the management of acute diseases, prevailed until within a recent period, and are by no means now obsolete. The antipathy to feeding patients will in time appear as absurd as to deny drink and disregard ventilation.

The foregoing remarks have had reference to diet in acute diseases. The importance of ample alimentation in chronic affections is better appreciated, but there is room here for further improvement. I shall content myself here with a maxim of conservative medicine, quoted from my first essay on this subject: "Under all circumstances, a chronic affection is less likely to be prolonged, serious lesions of structure are less likely to take place, and a fatal termination is postponed, in proportion as the vital powers are preserved." I need not stop to argue that the vital powers are to be preserved by a nutritious diet conjoined with other hygienic measures.

I have just now alluded to *air* as an element of hygiene in disease. Of the various hygienic conditions, perhaps to none has attention been more directed, of late years, than a sufficiency of breathing space and adequate ventilation. There is room, however, for the inquiry whether improvement here has reached its limit. Granting the largest estimate of cubic feet, and the best contrivances for the renewal of the air of the ward or sick-room, there is reason to think that additional influences pertaining to the atmosphere may be brought to bear with advantage on the management of diseases. During the present civil war in this country it has been repeatedly observed that the wounded have done better in the open air, exposed to deprivations and vicissitudes of weather, than after having been received into houses or hospitals containing every provision for comfort. Surgeons have found that the most effectual mode of arresting hospital gangrene is to transfer patients at once to tents, and the rapidity of improvement in the latter situation is remarkable. Now, the question arises, may not outdoor exposure, or what is equivalent thereto, be useful in many acute diseases? Its usefulness in chronic affections is acknowledged. This question is worthy of consideration with a view to experimental observation. It would not be surprising if patients affected with fevers and acute inflammations were found to improve in a notable degree under the freest possible exposure to air. As to the choice between such exposure and insufficiency of space and ventilation, there is, of course, no question. There are facts enough bearing on this point. But the question is whether such exposure may not be advantageously added to the observance of the usual sanitary requirements respecting air. Free and daily exposure is important as a means of preserving the vigor of the body in health; may it not be equally important as a means of keeping up the vital powers in disease? Every one accustomed to spend much time in hospital wards, must be aware of the sense of debility felt after remaining there for even two or three hours. How different the feeling after having been in the open air for the same period! How would the strength and energy of mind and body flag, if an active, healthy man were confined for successive days and weeks to an apartment, with the air sufficiently renewed to preserve its purity, but kept steadily at a uniform warm temperature! How refreshing would be cool breezes and alternations of heat and cold after such a confinement! Do not these facts apply to the body and mind in disease as well as in health? As a general rule, the hygienic circumstances required by conservatism in health are not less important in disease; and it is at least highly probable that, as respects the depressing effects of confinement in heated rooms on the one hand, and the invigorating effects of free exposure to air on the other hand, sanitary laws are applicable alike to disease and health.

As bearing indirectly on this topic, I may refer to instances of persons passing safely through fevers and acute inflammations, in situations in which they are necessarily exposed to atmospherical

vicissitudes. For example, I have reported a case of pneumonia affecting one entire lung, the patient living entirely alone in a shanty, in the winter season, in Louisiana; the shanty in a swamp, the floor of earth covered with water; his subsistence consisting of bread and water with a bottle of whisky, and the evacuations passed in bed. The patient was discovered and removed from this situation to the Charity Hospital of New Orleans already convalescing, and he rapidly recovered. I have known a patient affected with pneumonia escape from the ward in a state of delirium during the night, in the winter season, wearing only a cotton shirt, and walk a distance of two miles to a house where he had formerly lived. He was brought back to the hospital the next day, free from delirium, and he convalesced rapidly, having received no detriment from this great amount of exposure and exertion. Examples analogous to these occasionally fall under the observation of all practitioners. They show, at least, that prevailing apprehensions of danger from exposure to atmospheric influences, during the progress of acute diseases, are much exaggerated. This remark will apply to early gestation in convalescence from acute diseases. It was formerly supposed that most acute diseases left behind them a liability to relapse, or a condition favorable for the development of other affections; and, therefore, that great care must be taken to avoid all exertion, and especially the morbid agency imputed to cold. A better knowledge of the natural history of diseases has taught us that, as a rule, there is little or no tendency to relapse, and that the sequels of certain diseases proceed from intrinsic tendencies. Of the hygienic circumstances favoring rapid and complete restoration to health, getting up as soon as the strength will permit, and gentle exercise in the open air, are among the most efficient. I could cite illustrations of this fact in abundance. As I am writing, a striking instance comes to my mind of a fellow-practitioner who had kept the bed for a long time with chronic pleurisy, accompanied with great debility and emaciation, and, finally, bed-sores were added to his sufferings. At this juncture he was taken out of bed, placed in a carriage, and driven a short distance. The effect on body and mind was such that the experiment was repeated. He continued to ride out daily, and rapidly recovered. This was many years ago; he is now in good health and in active practice. This is a striking instance among many exemplifying the hygienic importance of air and exercise in determining convalescence and promoting recovery.

Are the requirements of conservatism fully met by a due appreciation of all that pertains to mental hygiene in disease? This question will lead to a few remarks which will conclude my brief consideration of conservatism as applied to hygiene in disease. Physicians are not unmindful of the reciprocal influences of mind and body. It would be trite to assert their existence and importance. They are patent to every medical observer. But it is perhaps true that mental conditions are more largely concerned in

either favoring or antagonizing disease than is generally supposed; and, hence, that the therapeutic value of hygienic influences acting primarily on the mind are not sufficiently appreciated.

It is obvious that the capacity of resisting and recovering from disease varies in different persons. The same disease, having apparently the same intensity, will destroy some and not others. And there is a wide difference as regards the duration of life with a similar amount of incurable lesions. Take, for example, pulmonary tuberculosis, how great the diversity in the extent of destruction of the lungs in cases in which this disease alone has produced death! Now this intrinsic power of overcoming disease, and of living on with irremediable affections which will sooner or later prove fatal, is not altogether vital, but in part mental. If the faculties of the mind be not impaired or obscured by disease, the patient is rarely indifferent to its progress or the result; it is accompanied by more or less emotional activity. Much, often very much, depends on the character of the predominant emotions. Hope, confidence in the physician and the means of cure, reliance on the wisdom of Divine Providence, are sentiments which sustain the vital powers and are conservative. On the other hand, discouragement, apprehensions, dissatisfaction, impatience, depress the vital powers and are non-conservative. The character of the predominant emotions will, of course, depend in a great measure on mental constitution, education, habits of thought and feeling, etc., with reference to which there is nothing like uniformity in different persons; but judicious management on the part of the physician may determine their character to a greater or less extent. The ability to secure complete confidence, to exert an influence over the minds of patients, enhances, in no small degree, the skill of the physician. As belonging legitimately to the practice of medicine, this is not enough considered. But the skillful exercise of a moral power requires accuracy of diagnosis and knowledge of the laws of disease. If the physician be not able to judge correctly of the situation of a patient, he cannot give the assurances which the nature of the case may warrant; prudence, as regards his own reputation, dictates great reserve, and he depresses his patient by non-committalism. In a dispensary practice limited to affections of the chest, I have been forcibly impressed with the good which may be done in many cases by simply declaring *ex cathedra* the absence of consumption or an affection of the heart. Poor patients, after having perhaps suffered long from secret apprehension of serious disease, come tremblingly, at length, as if to hear their doom pronounced. Thanks to the invaluable methods of physical diagnosis, the healthy state of the thoracic organs may be positively ascertained. How delightful to witness the transition from despondency to joy, when soundness of the suspected organs is announced and believed! The moral effect is often of more efficacy than any medicinal remedy. It would be easy to cite numerous instances of mental suffering with physical disorder persisting many

years, for the lack of an authoritative assurance of the non-existence of a fatal malady.

It does not enter into my plan to discuss the various means by which mental influences may be brought to bear on the management of diseases. I wish only to bring forward the fact that here is an important province of conservative medicine. A topic suggests itself in this connection which I will not pass by, because it relates to a matter concerning which the opinions and conduct of medical men differ: I refer to the co-operation of the clergy in cases of disease. Some physicians take the position that during the progress of diseases involving danger to life, the ministrations of religion are liable to interfere with recovery by producing excitement and discouragement. I desire to bear testimony against this position. Divesting the topic of all considerations save those which relate to the influence upon the progress of the disease, experience has led me to have no fear of harm from the timely and judicious offices of clergymen and religious friends. On the contrary, the effect is often manifestly salutary.

If the mental functions remain intact, every patient must think of the probability or possibility of an existing disease ending fatally. There can be no stronger evidence of an imbruted mind than the absence of all thought of danger. And the doubt, uncertainty, and anxiety engendered by the patient's reflections occasion a more depressing effect than even a definite expectation of a fatal result. Every physician knows how common it is to be entreated by the patient to make known to him his actual condition, to tell him the worst, a painful state of suspense with respect to death, as well as any event involving a deep personal interest, being more difficult to bear than its anticipation. For this reason, although a certain amount of reserve may be allowable, the physician should, as a rule, meet the demands of the patient for explicit information with candor, and he should never violate the truth. The most favorable condition of mind, in a hygienic point of view, is that induced by confidence and hopefulness in union with a cheerful resignation to the will of God. In so far as the services of the minister of religion conduce to the latter, he becomes the coadjutor of the physician. Irrespective of life and health, this topic has relation to momentous interests which would be here out of place, even if the writer were presumptuous enough to consider them. I wish simply to record the opinion, as a physician having had considerable opportunity for observation, that so far from there being any ground for antagonism, the minister of religion may effectively co-operate with the medical practitioner in behalf of the physical welfare of the sick.

Attention to mental hygiene in hospitals often falls short of the requirements of conservatism. The violations of conservatism, in this regard, consist, in the first place, of circumstances which tend to depress the vital powers by their influence on the mind, and, in the second place, in the absence of circumstances influencing the mind in an opposite direction. Obvious sources of a depressing

influence are apt to be overlooked. One of these is the necessity of witnessing the distressing manifestations of disease in other cases in the same ward. Cases which, from their character, shock or painfully excite the feelings, should, as far as possible, be isolated. To be confined in the same apartment, or perhaps to lie side by side with patients in a state of active delirium, or affected with convulsions, or in stertorous coma, or suffering extreme pain, is to be exposed to a depressing influence which one can best appreciate by imagining himself in such a situation. It is melancholy to think that a brutish insensibility is often the only resource against this influence. It is cruel to compel hospital patients to witness the phenomena of the dying act. How often have I seen the most marked evidence of the unfavorable effect of a prolonged agony in a hospital ward! If it be true that the patients may become habituated to these scenes, so as to regard them with indifference, is this a result to be desired? The propriety of assigning wards to tuberculous cases, or to incurable diseases, is more than doubtful as a measure of mental hygiene. What can be more discouraging to a tuberculous patient than to be surrounded with cases presenting all the different phases and gradations of consumption? For this reason consumptive hospitals are objectionable.

The circumstances just referred to may not be under the control of physicians connected with hospitals, but there are circumstances for which medical officers and visitors are exclusively responsible. It is very rarely the case that hospital patients are treated cruelly, roughly, or neglectfully; but the fact of their having the same faculties of thought and the same sensibilities as private patients is not always sufficiently borne in mind. If this fact were not sometimes forgotten, the nature of the disease, the prognosis, and the appearances which may be expected to be found after death, would never be discussed without reserve at the bedside of a patient; the chances of recovery or death in the cases under observation, the incidents of the dead house, and other topics of a like character, would not enter into conversations held in the wards. It is but just to say that such breaches of conservatism are by no means common, and that when they do occur they proceed generally from the thoughtlessness incident to youth and preoccupation.

There is room for improvement as regards mental hygiene in hospitals, not only by obviating circumstances which exert a depressing influence, but by trying to call into exercise thoughts and feelings which have a salutary effect in disease. It is a great charity to institute for the sick poor places of refuge, furnishing shelter, nourishment, nursing, and medical aid; and for many of the miserable candidates for such a charity, a hospital ward offers comforts far beyond those to which they have been accustomed. But supplying these needs does not fulfil all the requirements of relief: sympathy, encouragement, and religious ministrations may be added with advantage in a sanitary point of view, irrespective of other and higher objects. For this part of the hygienic man-

agement the physician must depend in a great measure on others. And here is a field for philanthropic labor which lacks husbandmen. How few of the many who are earnest to benefit their fellows think of the sick and friendless poor in hospitals, where, by judicious words and offices of kindness, they might reap a harvest of good works, of which least in importance, although important, is the favorable influence on the course of disease! But I am entering on a train of thought which, for the medical reader, offers nothing new and is not called for, and I therefore here rest my remarks on hygiene in disease.—*Am. Jour. Med. Sciences.*

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[From the American Medical Times.]

*Gunshot Wounds of Joints.* By DE WITT C. PETERS, Asst. Surg. U.S.A., Surgeon in charge of Jarvis General Hospital, Baltimore, Md.

The investigation and study of these injuries are at the same time the most interesting and perplexing that come under the observation of the military surgeon of the present day. The rule to amputate or even to resect a joint because it has been complicated by a gunshot wound, meets often in our practice with important exceptions. In General Hospitals, where we usually see our cases in a secondary condition, wounds of great joints require only the laws of conservative surgery to be employed in their treatment, when the results will frequently prove most gratifying. In these remarks it is not my intention to review the vast subject of these injuries, but I shall simply give my opinion in the management of several of the individual joints when wounded by missiles. At the shoulder-joint the complication may rest solely in exposing and opening to a greater or minor degree the *synovial membrane*, or we may have a compound comminuted fracturing of the bone entering into the formation of joint. There is still another class of cases where the ball (especially if it be a small-sized one) passes directly through the head of the humerus without either splitting or materially disturbing the general contour of the bone. From the battle-field of Gettysburg an interesting case of this latter series was sent to this hospital. The soldier had been wounded in the left shoulder, and, on admission, the joint and surrounding tissues were found greatly distended by healthy pus, the exit of which was partly prevented by the valvular condition of the posterior and lower wound. An operation was deemed necessary; the man was placed on the table and etherized, with the view of first making an exploration and then accomplishing what nature seemed to indicate. A straight incision was made in the course of the deltoid muscle, commencing at the acromion process and extending down-

wards for the distance of about three and a half inches. The incision gave free vent to a large quantity of pus and revealed the nature of the injury, viz: there was a direct opening through the head of the humerus and no true fracture. The parts were left open and dressed with simple dressings, and it has nearly healed at the present time, with every indication that the man can be again returned to active service. In all cases of wounds of the great joints we have attempted to save the limbs, with what success the annexed table will show. If the bones are comminuted a free incision is made in a favorable position; all fragments are removed and sharp spicula are trimmed with the bone forceps. The wounds are afterwards treated with the expectation of gaining a false joint, or at least ankylosis. The amount of bone resected depends on the amount of primary injury, always trying to save as much bony material as remained sound in the first instance. Our resections, therefore, are not governed by any general rules, but rather by the nature of the injuries. In a few instances the damage to the soft parts, vessels, and bony structure, has been such as to require amputation. In these cases the external appearance of the joints has been such as, by inspection, to warrant a belief that the limb might be saved, whereas the explorative operation has decided the case adversely. The probe and finger may fail (when the parts are greatly swollen and the openings small) to give us a correct idea of the state of the internal condition; but a few incisions decide the matter, and by removing the fragments, which will certainly die, the surgeon accomplishes his purpose. In speaking of gunshot wounds in general, Stromeyer justly remarks that "those cases proceed the best which are not meddled with. It would therefore appear that haste of the surgeon to do something is not always of service to his patient." This I conceive to be the error, if we are tied down by any set rules (either to amputate or resect) which are for the time-being customary. A friend of mine (Kit Carson), who has been a hunter of repute in the West for many years, received in a skirmish with the Black Feet Indians, a gunshot wound of the left shoulder, which completely shattered the bones of the joint; without any attention, save such as his unprofessional comrades could give him, he recovered. On examination years afterwards I could see the cicatrices, and found the head of the humerus enlarged and irregular in shape, yet by use he had overcome all obstacles and had regained the free use of the joint. Had he been seen by a surgeon when wounded, an operation would have been recommended, but certainly under it his case could not have terminated more successfully. The exposing of the cavity of any joint is a grave injury, for we all know the alarming symptoms that are prone to follow; but it appears to me that the danger is not so much due to the entrance of air as to allowing pus to be so closely confined, for the wounds of joints are in the majority of cases small, and the pus as it forms does not escape freely. Sir Benjamin Brodie recom-

mends free incision in these cases, and my own observation has convinced me of the correctness of his conclusions. After the battle of Gettysburg we had quite a number of wounds of the knee and elbow joints, which we treated by free incisions (where indicated), rest in an easy posture, loose dressings, and constant irrigation by means of the syphon. Our men were much broken down by hard service, and had a tendency to scurvy. Notwithstanding these disadvantages they have progressed favorably, In a very few instances they have terminated fatally from pyæmia (when the wounds were of the knee-joint); still, to all appearances, for a time, they locally presented the most encouraging symptoms. The fearful omen of a chill was the first indication that warned us of the constitutional troubles we might anticipate, and which invariably terminated these cases in dissolution. The gunshot wounds of the elbow-joint, enumerated in the table, we treated by resting the limb bent at a right angle on a grooved tin splint which had been previously well padded with tow. They were retained in this position by loose bandages, the wounds were kept clean, and the patient, as soon as able, was made to exercise in the open air, and attention was paid to passive motion. The diet of these patients must be generous, and malt liquors are to be ordered them to support their strength. The diet of a soldier in the field is substantial, but it is not sufficiently mixed to be healthy; that is, he does not have the opportunity to obtain his customary amount of vegetables, and it has been found in General Hospitals, where the men are supplied with these articles, that their condition is much improved, and indeed, in most chronic complaints, a wonderful change is worked under their use. The plan of treatment to be adopted in every case of gunshot wound of the knee-joint cannot, for a variety of reasons, be so uniform as in the former series. The patient's feelings are to be consulted as to the apparatus to be used in keeping the limb and joint at rest and free from unsupportable pain. It has been our habit to give preference to either the double-inclined plane or Smith's anterior splint, and when these have not felt comfortable to the patient we have tried with success a sort of cradle where the limb rests at will on strips of bandage made fast on each side to the frame of the apparatus. The wounded part is left open and free irrigation is kept, and as the incisions close, leaving sinuses, these are cleaned daily by injections, and among the best of the latter we have found to be a weak solution of permanganate of potash. The incisions into the joint are only made when the pus accumulates so as to be distinctly recognizable and has no free means of escape. The result we hope for is ankylosis, as a false joint appears interdicted by nature, and in our endeavors to gain this end we pay particular attention to the position of the limb in order that it may be useful to the patient in after life. The cases under consideration are generally tedious in their recovery, and require an equal amount of patience and perseverance on the part of the surgeon in treating them. In the healing of compound

fractures of great joints we have the opportunity of distinguishing the division made by Dupuytren of primary, secondary and tertiary splinters of bone. The first comprise the loose fragments remaining after the injury is received, the second those still hanging to the soft parts, and the third are the result of inflammatory necrosis of the bone. The two former are removed when the operation of resection or partial resection is performed, and the latter is apt to occur as a sequel to the fracture and the operation. The thorough examination of a gunshot wound of a great joint cannot be properly conducted without placing the patient under the influence of an anæsthetic, and in hospital practice sulphuric ether is the safest, and when administered by experienced hands is equally as efficacious as any other anæsthetic. To increase its effects, and render the patient more quickly susceptible to its influence, we have preceded its use by giving the patient to drink two ounces of brandy or whisky. By the following table it will be seen that we have treated on the principles stated in these remarks 149 cases of gunshot wounds of great joints. The success has not been as great as we would desire, yet it is such as to warrant us (in the present incomplete state of our knowledge) to a continuance of the same.

*Tabular Statement of Gunshot Wounds of Great Joints treated in this Hospital since June 20th, 1862 :*

	Side of Body.		Gunshot Wound.	For what Performed.	Total.	Results.					Remaining under treatment, 1863.	Total.		
	Right.	Left.				Other Causes.	Returned to Duty.	Furloughed.	Deserted.	Discharged.	Died.			
Wrist....	2	6	8	.....	8	...	2	...	1	2	2	7	1	8
Elbow....	6	6	12	.....	12	1	1	...	1	7	9	3	12	
Shoulder....	24	24	48	.....	48	5	2	1	2	3	32	45	3	48
Ankle....	15	20	35	.....	35	3	1	1	2	2	25	34	1	35
Knee....	26	20	46	.....	46	4	6	2	6	7	16	41	5	46
Total..	73	76	149	.....	149	13	11	4	11	15	82	136	13	149

[From the American Medical Times.]

*Treatment of Gunshot and Penetrating Wounds of Chest and Abdomen by Hermetically Sealing.* By B. HOWARD, M. D., Assist. Surgeon, U. S. A. Surg. in Chief Artillery Brigade, Fifth Corps, Army of the Potomac.

No class of cases are so painfully humiliating to the military surgeons as gunshot wounds of the chest. When the call for aid is so peculiarly urgent and distressing the surgeon has been able but to lament his impotence, to hide the wound from view with a simple dressing, and sorrowfully abandon the patient to his fate. It is the appreciation of this that induces me, without waiting for properly arrayed statistics, to write prematurely from the field, and state briefly a plan of treatment which I presume will meet with very marked success, and which has already met with the general commendation of my confrères.

The most formidable symptoms of gunshot wound of the lung, and one or more of which in their proper order produce death in fatal cases, are, *Hæmorrhage*, *Dyspnæa*, and *Suppuration*.

The custom of leaving the wound open is objectionable because it affords a means of outflow as fast as the effused blood reaches its level, and thus favors the continuance of *Hæmorrhage*.

It allows the full force of atmospheric pressure upon the entire surface of the lungs, and thus necessitates *Dyspnæa*.

It admits continually renewed currents of atmospheric air ensuring decomposition of the clot in the pleural cavity with extensive and profuse *suppuration* of a very foetid character, while it does not provide for its exit until after so great an amount has accumulated as to have caused it to rise above the level of the wound; and after its partial subsidence by overflow the wound again ceases to be available.

Suppose, however, that the wound be perfectly closed, the following will at once appear among the advantages to be gained.

1st. *Hæmorrhage* is controlled. At the worst the amount of blood lost after the operation cannot be more than would suffice to fill up the unoccupied space remaining in the pleural cavity; the elastic clot resulting, furnishing a styptic par-excellence for the wounded vessels of the yielding lung.

2d. *Dyspnæa* is immediately relieved upon removal of the atmospheric pressure, and the restoration of the parts approximately to their normal condition.

The inclosed volume of air being absorbed, the lung is again at liberty to expand with its usual freedom, limited only in proportion to the size of the clot which may happen to be in the pleural cavity.

3d. *Suppuration*, if not prevented, is greatly diminished by shutting out the constantly renewed currents of atmospheric air, and its character is very favorably modified.

Indeed, if the wound were closed soon enough, I deem it possible that the slough of the track through the lung, with the limited amount of attendant pus, might be entirely disposed of by absorption and expectoration. The operation which I practise is by hermetically sealing as follows:

All accessible foreign bodies having been removed, introduce the point of a sharp-pointed bistoury perpendicularly to the surface just beyond the contused portion, and with a sawing motion pare the entire circumference of the wound, converting it into a simple incised wound of an elliptical form; dissect away all the injured parts down to the ribs, then bring the edges of the wound together with silver sutures deeply inserted, at not more than a quarter of an inch apart; secure them by twisting the ends, which are then cut off short and turned down out of the way. Carefully dry the surface, and with a camel's hair pencil apply a free coating of collodion over the wound; let it dry, and repeat it at discretion.

For greater security shreds of charpie may now be arrayed crosswise over the wound after the manner of warp and woof—saturate it with collodion, and when dry repeat the process until the wound is securely cemented over: as a still greater protection a dossil of lint may then be placed over the part and retained with adhesive straps.

If there be a tendency to undue heat in the part it may be kept down with cold affusion; should any loosening of the dressing occur an additional coating of collodion may be applied. The sutures must not be removed until healing by *first intention* is complete.

Should suppuration occur so as to occasion distressing dyspnœa, proceed to treat it in all respects as a case of empyema, introducing the trocar at the most dependent point, and taking special care to avoid the admission of air.

My first experiment in hermetically sealing was in a bayonet wound of the abdomen in a private of the 18th U. S. Infantry, in 1861, which was followed by the best results. Since then I have deemed it the most eligible treatment for gunshot and penetrating wounds of closed cavities when not contra-indicated by serious complication. In incised or punctured wounds the paring process is of course dispensed with.

Practically the immediate results have been very remarkable, and I think unprecedented. The most painful cases of dyspnœa have been promptly relieved, the patient usually falling into a quiet slumber in about an hour after the operation, as in a case observed by my friends, Dr. Clements, U. S. A., Asst. Med. Director Army of the Potomac, and Dr. Taylor, U. S. V., Med. Inspector Army of the Potomac, and many others. The subsequent results, also, so far as I have been able to continue the treatment, have never disappointed my expectations.

I have obtained healing by *first intention*, and removed the

sutures within five days after the operation. This mode of treatment by hermetically sealing has, I believe, never been practised before, though the principle of excluding the atmospheric air in gunshot wounds of the chest has been endeavored to be carried out by various expedients with relative advantages corresponding to the completeness of the occlusion effected.

Dr. Barnes, Med. Inspector-Gen. and Act. Surg-Gen. U. S. A., informs me he once treated a gunshot wound of the lung by stopping up the aperture with a conical tent made of a pouch of cloth filled with lint, its apex being fastened to a roller bandage. The dyspnœa was greatly diminished, healing by granulation took place, the case progressed unusually well, and terminated in recovery.

Neither in the Western nor Eastern Armies, however, have I seen any attempt at closing the wound; a covering of adhesive plaster or simple dressing is the only application I have seen used.

I think it will appear evident that the simple causes of fatality in gunshot wounds of the lung, and which have heretofore proceeded or abated uncontrolled by art, may each in their proper order be restrained and modified, if not prevented or removed by the simple operation above described, which in the worst event cannot possibly incur any risk of additional harm to the patient. Though the careful continuance of the treatment so necessary to proper success be certain to be interfered with in the successive transfers of the patients to the care of different medical officers, it should not prevent the performance of the operation at any time within forty-eight hours after the reception of the wound, as it may enable the patient to survive the shock and the transportation to the General Hospital, by which time a very dangerous period will have passed.

Some cases upon which I operated were six days in the ambulances, before reaching a General Hospital, part of the road travelled being of the worst description; on the fifth day all but one of these so treated were able to walk comfortably. On their arrival all the wounds were unfortunately reopened, except when the union was too complete to allow of it, and the usual water-dressing was substituted. Yet the ratio of mortality of the whole number wounded in the lung in that engagement, and which were treated indiscriminately, was nineteen per cent. less, dating from the time the wounds were received, than that of the cases previously admitted to that hospital, dating from the time of their entering the hospital. Though but five cases, their corroboration under the circumstances is valuable. When speaking of the whole number wounded, I omit one case in which I had not time to close the posterior wound from which profuse haemorrhage subsequently occurred, and in two days after which the patient died.

*On the Structure and Developement of the Vetebrate Skeleton.*  
By Professor HUXLEY, F. R. S.

In the course of the preceding ten lectures I have done my best to confine myself to matters of fact, and to the interpretation which directly arises from a very simple method as applied to those facts. The matters of fact have, as far as practicable, been demonstrated before you; at any rate, they are capable of demonstration. The interpretation has rested upon a principle so obvious that it requires no special justification—the principal that those parts in various skulls are identical, and should receive the same names, which correspond in development, and in their relations to the soft parts and to one another. And for myself I confess that with the establishment of those matters of fact, of those direct interpretations, the great object of science seems to me to be largely fulfilled. But in the present condition of anatomical views upon the skull, a course of lectures upon the vertebrate cranium which should be devoid of some commentary upon theories which have been offered of the composition of the cranium would, justly enough, be considered imperfect; because there is a true theory as apart from the speculative hypotheses—there is a true theory, which is simply a generalized statement of the facts which we have found out; and there are other theories, which add to such generalized statement other considerations, and which may or may not be capable of verification.

That which is commonly understood now by the theory of the skull, is the doctrine that the osseous cranium—it must be borne in mind that the doctrine has gone no further than the osseous cranium—is made up of a greater or smaller number of coalesced vertebrae, and that, to use the accepted phrase, the skull is a modification of the vertebral column. That doctrine originated with a man of vast genius—a man, perhaps, unexampled in the history of letters and of science, as combining, as I think, the highest proficiency in both departments—I mean Goethe. He originated, or rather I should say he invented, toward the end of the last century, the doctrine that the skull is composed of a number of segments, corresponding in their nature with the vertebrae. I am perfectly well aware that this has been controverted. I am well aware that, not only in his own country, where there were personal interests and prejudices coming into play, but even in this country, where no such motives could intervene, the claims of Goethe to this discovery have been disputed; and not only that, but that it has been more than insinuated—and it is with regret that I state it—that the grand old poet, at seventy years of age, full of all the honors which his people had conferred upon him, was guilty of the meanness of taking to himself the credit of the doctrine invented by a young and rising professor, ignoring his claims and setting up others which had no foundation. Nay, more: the

audacity of the accuser has gone so far as to suggest a certain stupidity, and that even Goethe—this man of vast imagination and undoubted ability—was constrained to invent the same method of accounting for his discovery as that which had been given by Oken. The statement has passed into English literature; it is to be found in a work which will be consulted by all who wish to be acquainted with this matter, and it will doubtless be regarded as an authority—it is to be found in an article upon Oken in the “*Encyclopædia Britannica*. ”

What, then, are the facts of the case? Goethe, writing in the year 1820, or thereabouts, has stated that the mode of his discovery of the vertebral composition of the skull was this:—“The three hindermost parts,” says he, “I knew before; but it was only in 1791, when I picked up an old and broken sheep’s skull amidst the sandy dunes of the Jewish cemetery in Venice, that I perceived that the facial bones also were composed of vertebræ; and perceiving, as I did, the transition from the first pterygoid bone to the ethmoid bone and to the turbinals quite distinctly, there I had an *apercu* of the whole at once.” We shall see that Oken, writing in 1807, also said, and no doubt with perfect truth, that he had been led to his conception of the theory of the vertebrate skull by picking up an old and whitened deer’s skull, upon the Hercynian, within the Hartz mountains; and it has been more than suggested that this statement of Goethe’s was a sort of clumsy fabrication imitating the invention of Oken. Happily, the general order of things in this world is tolerably just, and a document which Goethe doubtless had himself utterly forgotten (and which it is pretty clear, by a comparison of dates, he had forgotten) has appeared within the last year or two, which places the veracity of the old poet beyond the reach of the most vigorous and determined assailant. That passage was brought to light by an eminent German author a year or two ago, who says (referring to a correspondence which had just then been recently published between Goethe and the family of Herder, the clergyman and great literary German) Goethe was in the habit of corresponding with these people regularly; and he wrote, among other folks, to Madame Herder. One of his letters has come to light under the date of the 4th of May, 1790, and in that letter is this passage:—“By the oddest happy chance, my servant, by way of a joke, picked up a bit of an animal’s skull in the Jews’ cemetery at Venice, and, by way of making fun, offered it to me as if he were presenting me with a Jew’s skull. I have made a great step in the explanation of the formation of animals.” It is quite clear that this is a complete and perfect testimony to the veracity of Goethe when, in consequence of various circumstances that took place, he affirmed that thirty years ago (it was exactly thirty years ago) he had made the discovery to which I here refer. It is to be hoped now that all further detraction, at any rate, will cease on that point. And this detraction was the more unwise because it was wholly unnecessary.

No person looking at the history of the past would dream of regarding Goethe, who indubitably invented this doctrine, but who kept it to himself for thirty years—led to that course doubtless by the great difficulties which his vast knowledge and clear judgment showed him were in the way of the application of the doctrine—I say, no one would have been led to set up his claim as a discoverer against that which is justly the right of Oken, who, in the year 1807, in a similar manner to that which happened to Goethe, was led, by picking up an animal's skull in the Hartz mountains, as I have said, suddenly to conceive that the osseous cranium was composed of three segments, and that the three segments answered exactly and precisely to so many vertebræ. No doubt Oken was the first promulgator of this doctrine; to him is all the credit that may attach to it justly due—all the credit that may attach to the definite discovery of the segmentation of the skull. Whatever we may think about his vertebral theory, no one can doubt at all that the merit of the discovery of the osseous segmentation of the skull is indubitably due to Oken; nor has anything been done since which in any way exceeds in merit that first singular paper which he published on the subject in 1807, under the head of "Ueber die Bedeutung der Schädelknochen." It was his inaugural address on taking the chair at the University of Jena; and to show you how easily this notion may have arisen, I have here that subject which led Goethe to imagine the vertebral theory, and that subject which Oken made use of as the best illustration of it—I mean a sheep's skull. The parts here have simply been macerated, and otherwise are left free in their natural connection; but you will see that it is perfectly easy, by exercising a little pressure, putting in the first place a knife between the supra-occipital, to separate one segment between the supra-occipital and the parietals, and, putting a knife again between the parietals and frontals, to separate another, and thus to obtain three perfectly distinct osseous segments. It was that which Oken saw in the bleached deer's skull; it was that which very naturally, and as I think very consistently, led him to say (he says the conviction came across him as a lightning flash) that this great skull, which contains the dilated continuation of the spinal marrow, is itself nothing more than a dilated continuation of the vertebral column. In his first essay he is guided entirely by the analogy of the sheep's cranium, and he says that the hindermost vertebræ, which he calls the ear vertebræ, is composed of the basilar portion of the occipital bones and the two ex-occipitals—the two articular portions and the supra-occipital; that the next segment is formed by the posterior sphenoid, by the great alæ of the sphenoid, and by the parietals; and that the anterior segment is formed by the pre-sphenoid, by the little orbito-sphenoids, and by the frontals. Use the term segments, leaving the doubtful term vertebræ out of place, and there cannot be a doubt that Oken was perfectly justified, and that the fact will remain as he stated it to be for all time, as one which you can always demonstrate in the

osseous skull. Then he goes on to say that there is an anterior portion, consisting of the ethmoid, the nasals, and the vomer, and that you can take that away. He is somewhat doubtful as to what is the nature of this; but, at any rate, he suggests as a possibility that the vomer may be in reality the continuation forward of the vertebral axis, formed by the pre-sphenoid, the basi-sphenoid, and the basi-occipital; and that perhaps it may represent two or three vertebræ coalesced. He appears to be misled by some statement on this subject by an anatomical writer; but that point he leaves open. At first he stands simply by the three cranial vertebræ, as he calls them. He says: "You may think, perhaps, that I have forgotten the petrosal bone. Not at all. This petrosal bone is not a vertebræ; it contains no part of one of its vertebral components of the skull; but it is a sensory organ; it is an ossification developed around the organ of hearing which characterizes the formation of that organ, in just the same way as the membranous case around the eye is peculiar to that organ. Therefore you must regard this as something apart from the segments of the vertebræ, and look upon it as a sense capsule—not considering it as entering into the composition of the skull at all." Having arrived at this notion of the resemblance of the upper arches of the skull to the cavity of the upper arches of the vertebræ in the trunk, the next step was a very simple and very obvious one. Finding in the skull, so far, a perfect resemblance to the vertebral column, Oken, not unnaturally, arrived at the conclusion that the lower arches of the skull—the parts of the face—must answer in some way or other to the parts of the trunk; and carrying out that idea with the boldness which was characteristic of him—indeed, I might almost have said with the rashness which certainly characterized the majority of his later speculations—he said: "If I find the repetition of this upper part of the vertebral column in the skull, I must also find a repetition of the lower part; and as I find there a thorax and abdomen, so I must find a thorax and abdomen in the skull;" and he said that the thorax of the skull was formed by the palatine bones and the adjoining parts, and that the abdomen of the skull was formed by the oral cavity. The idea is not so far-fetched as you might at first imagine. There is the same sort of *a priori* probability about it that there is about the identification of the upper arches of the skull with the upper arches of the vertebral column. By this time the notion of identity of composition as he progressed, appears to have taken full possession of his mind, and he said to himself, "If we can find the upper and lower arches of the trunk in the head, we ought to be able to find the limbs." And totally undeterred by the difficulties which would have suggested themselves to a man of less daring in this matter—and those difficulties which, as I believe, kept Goethe from promulgating his doctrine—he said: "I will find all these parts. There is the shoulder-blade of the head in the squamosal bone; there is the arm of the head in the jugal

apparatus; and there is the hand of the head in the upper maxilla; and there are the fingers of the head in the teeth; and there is the thumb of the head in the pre-maxilla." If you had asked Oken how he knew that these were fingers and thumbs, and so forth, he would probably have been puzzled for an answer. He would have told you that the idea dominated over all these things, and that that great perception of an archetype, which was perceived only perhaps by the man of genius, could not be seen by inferior people who were simply looking at the facts; and he said, therefore, that the arm of the head was attached to the side of the head, fixed to it, and that the two hands of the head were, so to speak, expanded to the sides of the nasal capsule. Where, then, were the legs of the head? Nothing daunted, Oken said they were to be found in the lower jaw, and that the teeth of the lower jaw were the toes of the head in the same way, and that the hyoidean apparatus was nothing more nor less than the pelvis of the head. One would have thought that the difficulty of finding two legs of the head attached to scapulae of the head here was rather a strong one; but Oken has an answer for all these matters. It is not worth while to enter into them largely now, having other things to attend to. It does not seem to have entered his mind that for anything like scientific speculation you must have a criterion of the truth or falsehood of what you say, and that unless you have some such criterion, you can go on inventing theories and counter-theories until Doomsday, every one of which shall be just as good as every other. A few years afterward, Oken enlarged his idea by regarding the nasal apparatus as a fourth vertebræ, and thus arose that view of the skull as composed of four coalesced vertebræ, which has formed, without any considerable or material alteration, the basis of every speculation that has been published since. In this way Oken founded a school. His ideas were received with open arms in Germany, and his contemporaries, some of them, carried to a wonderful pitch the wildnesses—I had almost used a stronger word—with which the ingenious speculations of Oken are, to a vast extent, mixed. These, like Spix, for example, propounded the most extraordinary notions of the composition of the skull—notions which one must acquaint oneself with as a matter of history; but when one has done that, the best thing to do is to forget them, and to think of them no more. Others, more judicious, more accurate in thought, like Bojanus, enlarged the doctrine in other directions; but altered nothing, added nothing whatsoever to the method of Oken, but simply shifted backwards and forwards the lines of interpretation which he had suggested. By degrees the notion spread in France, or rather I should say that it had an independent origin there to a certain extent, partly depending upon an interchange of ideas with Germany, partly arising as the result of the development of notions which Geoffroy St. Hilaire propounded in France upon the unity of organization, and so forth. Thus further modifications were produced, some admitting three vertebræ, some making out

that there were four, some that there were six, and some that there were seven; but the character of the reasoning and the method of the interpretation were not one whit changed from that which was invented by Oken.

In England, again we have had our own propounders of similar theories. I do not know that anything which I have said about Geoffroy St. Hilaire and about the Germans does not equally apply to them. I am quite at a loss to find in our English speculations any advance whatsoever upon the method, or in the main upon the facts, of Oken. If it is absurd, without good evidence, to talk of the jugal apparatus and the squamosal apparatus, and the upper jaw, as being the arm of the head, it is at least as absurd, without equally good evidence, and upon mere fantastical grounds, to regard the arm as a rib of the head. The one notion has exactly the same value and scientific standing as the other, and if transpositions of Oken shock the mind, not less do those who are accustomed to the study and careful interpretations which result from embryology feel astounded in having to believe that the appendage of the atlas has, somehow or other, got in front of the rib of the occipital bone, and thus given rise to the position of the parts as we find them. My business, however, is not to enter into a criticism of these theories, but simply to show what is their scientific position.

In France, however, and in England, there have been great exceptions to these mere blind developments of the notions of Oken. In France the enormous knowledge and accurate thought of Cuvier kept him from drifting into such conceptions. He admitted, as all must admit, that there was a segmentation of the skull; but the moment these notions of the vertebration of the skull were proposed, he said, "I want evidence; I want a criterion. It is of no use talking to me about the relative repetitions, shifting backwards and forwards, and all the rest. I want to know something which shall prove to me that these processes really do take place, or I will not accept your interpretation." Therefore Cuvier always held aloof from the vertebral doctrine, and I confess for myself I fully sympathize with those occasionally somewhat bitter sarcasms with which he overwhelmed the advocates of those notions, pernicious to everything like accuracy of thought, in his "*Ossemens Fossiles*," and his "*Histoire Naturelle des Poissons*." In this country, again, there has been another exception. I allude to Professor Goodsir, of Edinburgh, and the able young men who have risen from his training. He is the only man, so far as I know, either on the Continent or here, who has understood the value of that which took place between 1837 and 1840, or thereabouts, in Germany (of which I shall have to speak presently), and has endeavored to correct the errors of the merely Okenian line of speculation by the severe criteria of embryology. What was it, then, that took place between those years, 1837 to 1840, in Germany. It was a revolution in method—it was the discovery of that crite-

rion for the want of which this wild and waste method of speculation upon the nature of the skull had originated. At about the period to which we refer, Reichert and Rathke, two men whose names must always be mentioned with the profoundest respect in connection with the skull, commenced their embryological researches, and instead of confining themselves to the easy task of sitting upon their chairs, and speculating backwards and forwards as to how the bones of the skull should be fitted together, like a child's puzzle, they set to work to ascertain how they had really come, and by the most laborious and difficult studies of development, to see in what manner the complex adult skull had arisen from its early state, and how, by tracing back the methods of development, by tracing back every skull to that early condition in which it resembles every other skull, you are able to identify the precise places at which each bone arose, and so to eliminate from your mind the mystifying influences of subsequent change. These men—Reichert, by his discovery of the visceral arches, and by his wonderful study of their modification; Rathke, by his investigations in comparative embryology, and his still more remarkable discoveries, as I think, into the true nature of the base of the skull, and the mode of its production—founded an absolutely new epoch and a new method; and for me any work which has been published since that time, and which contains no reference to the labors of these men and ignores them, is on exactly the same scientific footing as a treatise on astronomy written at the present day which should ignore the discoveries of Newton; it is an anachronism, has no scientific place, and is unworthy of consideration.—*London Lancet.*

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[From the Boston Medical and Surgical Journal.]

*European Ophthalmic Institutions.*

MESSRS. EDITORS: I had hoped to find time, while at Berlin, to complete to that point my description of the eye institutions of Germany, but find myself again in arrears.

The school of Vienna has long been regarded as one of the most famous in the department of ophthalmology, a series of distinguished professors having occupied its chairs. Most of those who were there at my former visit had passed from the stage, but their places are most worthily supplied by their successors.

No city offers easier and more concentrated facilities than Vienna, for study in this, as also in other departments of medicine. Two of the principal cliniques, those of Profs. Arlt and Jäger, are comprised within the walls of the great general hospital—a city rather than a house, of the sick. Another equally interesting clinique is established at the neighboring large military hospital under the care of Professor Stellwag von Carion. All of these

gentlemen are well known by their published works; Professor von Jäger by an illustrated atlas of morbid appearances of the internal parts of the eye, as disclosed by the ophthalmoscope, and Professors Arlt and Stellwag von Carion by treatises on the pathology of the eye, both of great excellence, and of which the late edition of the latter's work is regarded as one of the best expositions of the present state of science as regards the diseases described.

As the hours are not the same at the different cliniques, the student has an opportunity of first following the visit in the wards and seeing those who come for consultation as out-patients with Professor von Jäger or Stellwag, and also of witnessing their operations, and is afterwards in time to follow the same course in the wards of Professor Arlt. After his operations have been performed, Professor Arlt adjourns to the amphitheatre to receive the out-patients, and takes great pains to exhibit and explain the cases of interest or those serving as types of different maladies. The manifest interest exhibited by the Professor in the improvement of his pupils must be encouraging to them. After the consultation is finished, comes a lecture of more or less length, at the conclusion of which he gives a private course of operations to a class of young doctors of medicine. He had the kindness to invite me to be present at this course, and to do, himself, for my gratification, such operations as he did not find opportunities of performing upon patients in the wards.

This private course, as also that by Prof. von Jäger on the ophthalmoscope, are so highly valued as to attract pupils from all parts of Europe. Each member of the class has opportunities for repeating over and over again, under the direction of the Professor, all the capital as well as the lesser operations on the eye and its appendages.

Among the out-patients are to be seen a very large number of Polish Jews, who exhibit the extreme of filthiness of person, and who live, as I learned, in close hovels, under very unfavorable hygienic conditions. Most of the affections for which they come for advice are cases of conjunctivitis, aggravated by neglect to an extreme degree. In the military hospital a large proportion of cases of purulent and catarrhal affections of the conjunctiva is also observed, as might be expected of this age and class of patients.

The general hospital of Prague occupies one of the best possible positions, on very high ground, where there is a free circulation of air, and commanding fine views of the picturesque city on the one hand and its charming environs on the other. It has a splendid ophthalmic department, under the care of Prof. Hasner. He is an exceedingly rapid and a very skillful operator, and evidently takes great pains in the clinical instruction of the pupils. Though the number of patients is less than at Vienna, it is still ample for all purposes of observation, and a student has certain advantages in an institution of this character which he loses in

those of larger cities. He has opportunities for deliberate examination of patients and for obtaining explanations in regard to them, which are impossible where he is one of a crowd of learners; and, for a beginner, I think such a school as that of Prague is to be preferred, as affording even better instruction than he can gain at Vienna or Berlin. He has also opportunities for observing the after-treatment of cases operated on, which are not always afforded in large cliniques where the rapid succession of events prevents too close surveillance of those which have preceded.

As the ancient capital of Bohemia, and being at a distance from the imperial city, Prague forms a centre which attracts to itself a large number of cases requiring operations, for the good results of which both the high reputation of Prof. Hasner, and the extremely favorable situation of the hospital, concur.

Prague is one of the most interesting cities of Germany; remarkable for the picturesque effect of its numerous quaint towers and fortifications, the stateliness of its grand old edifices, and the beauty of its environs, and a residence there might pass very agreeably.

Truly yours, H. W. W.

Utrecht, Holland, 20th July, 1863.

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### *Efficacy of Sesquichloride of Iron for the Treatment of Ulcers about the Nails.*

M. Billon communicates the following to the *Journal de Med. et de Chirurgie*:—Dr. Gaillet, of Luynes, (Indre et Loire,) having recently published a case in which the application of sesquichloride of iron effected a cure of the affection popularly termed *the growth of the nail into the flesh*, I take this opportunity of recording several instances of the same kind, witnessed by myself, which confirm the results obtained by M. Caillet, and may, perhaps, be deemed not wholly uninteresting. In 1858, Dr. Wahu, staff-physician to the army, having succeeded with this remedy in curing the painful diseases in question, I resorted to the same method, and with the greatest benefit in four cases. I may here remark, that ulcers about the nails are occasionally observed among our soldiers, having escaped the attention of the medical boards, or being caused by the pressure of the boot during forced marches. Under these circumstances, a *prompt* and *painless* cure may be effected by inserting the *dry* sesquichloride between the nail and the protruding flesh, and powdering the latter with the same substance. A large bandage should be applied over all, not impregnated with the *liquid* sesquichloride of iron, as recommended by Dr. Caillet, a precaution which may, however, be useful, as the folds of the band dry rapidly, and preserve their situation in a more exact manner.

On the following day, the exuberant flesh is found to have acquired the hardness of wood; suppuration speedily ceases, and a cure follows after two or three applications. This simple and mild treatment is obviously far preferable to the numerous surgical procedures hitherto recommended. In the course of four or five days, in a week at the farthest, the original pain ceases, the swelling subsides, and the patient is able to walk. Naught remains but the hardened protruding flesh, which falls away about a month after the application of the sesquichloride of iron. These are the results yielded by the method in four soldiers suffering from the growth of the nail into the flesh. They have appeared to be sufficiently remarkable to warrant the communication.

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### Bibliographical Notices and Reviews.

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*On Diseases of the Skin.* By ERASMIUS WILSON, F. R. S. Fifth American from the Fifth and Revised London Edition, with Plates and Illustrations on wood. Philadelphia: Blanchard & Lea, 1863. (For sale at the city book stores.)

This work, so favorably known to the profession, has reached its fifth edition. This edition contains the Plates illustrating diseases of the skin. The publishers of the American edition have added also the plates prepared by the author to illustrate his work on *Constitutional Syphilis* and *Syphilitic Eruptions*. These improvements render this edition very valuable.

The plates are very well executed—the coloring being as perfect as is usually observed in works of this kind.

If it were necessary we might commend this work to the attention of those just entering the profession as a good résumé of what is known of the skin—its physiology, pathology, the treatment of its diseases, etc.

To the student of medicine a knowledge of the functions of the skin is very important, because upon this will very much depend success in treatment.

Those who undertake to study the functions of the skin should bear in mind its glandular character and its nervous and vascular endowments. In one sense the skin is a great gland enveloping

the body and separating from the mass of the circulation water, fatty matters, phosphate of lime, carbonate lime, carbonate magnesia, chloride sodium, acetate soda, chloride potassium, acetic acid; sulphates, acetates, lactates and certain other substances which even the chemist is unable to appreciate, but which the alfactories often take cognizance of. The entire length of the glandular tubing, for the elimination of the perspiratory fluid, is about 153,000 inches, or two and a half miles. The office of the cutaneous perspiration is, it is said, to regulate the temperature of the body. This is only one of its offices, though a very important one.

The Sebaceous system has for its object the secretion of oily substances, mixed with mineral matter of several kinds. The office of these oily substances is, as yet, a matter of speculation. Besides these glandular movements the skin, from some very conclusive experiments, must be regarded as taking a part in the process of respiration. It has been found by inclosing one of the limbs in an air tight case, that the air in which it is confined loses in oxygen and gains in carbonic acid. A very striking endowment of the skin is its capacity to resist extremes of temperature. The blood has a temperature of 98 or 100 degrees, and, strange as it may appear, this cannot be changed. A change of a few degrees in either direction is fatal to life. The endowments of the skin, however, are of such a character that the body is protected in a temperature that freezes mercury, or one of twice the elevation necessary to boil water. The skin has the powers of one of the special senses. Indeed, it not only performs the office of tactility, but is capable of taking the place, to a very considerable extent, of the eye or ear, when either is impaired. Other offices may be noticed, as for example that of exosmosis when the body contains an excess of water, and endosmosis when there is a deficiency.

Such is a very partial summary of the offices of the skin—its physiology. The diseases, of course, relate in some way or other to these functions. They may, as Andral would say, involve simply “alterations” of function or “alterations” of structure. In either event the student’s knowledge will depend very much upon his knowledge of the physiology.

From such views it would seem that cutaneous diseases might be most profitably classified on the *Anatomy* and *Physiology* of the skin. This really was the classification of the first edition of this work. In that we had—1, Diseases of the Derma proper;

2, the Sodoriparous system ; 3, Sebiparous system ; 4, Hair and hair follicles. However well adapted this *Physiological classification* might be for the student or scientific inquirer, it was thought by the author to be not equally suitable to the practitioner. In its place, when the *fourth* edition of the work was being issued, the author adapted the *Etiological classification*, a classification founded on the supposed CAUSE of cutaneous diseases. This classification was proposed by Hippocrates when he divided cutaneous diseases into *local* and *constitutional*. *Local* he believed to depend upon some pathological change present in the part, and *constitutional* affections he regarded as an effort upon the part of nature to throw out or eliminate a cause of disease by the cutaneous system. The works of Lorrey and Baume's are founded on a similar classification. Galen made a classification of cutaneous diseases, known as the *Topographical classification*. He, as a consequence, divided cutaneous diseases into such as affect the head and such as affect the remainder of the body. Alibert, a modern writer, adopts the classification of Galen. Plenck in 1776, grouped all diseases of the skin into fourteen classes, namely : Maculæ, Pustulæ, Vesiculæ, Bullæ, Papulæ, Crustæ, Squamæ, Callositates, Excrescentiæ, Ulcera, Vulnera, Insecta, Morbi unguium, and Morbi pilosum. These classes he subdivided into one hundred and fifteen genera. Willan pruned this classification down and adopted it in his work of 1778. His orders of cutaneous diseases, eight in number, are as follows : Papulæ, Bullæ, Squamæ, Exanthemata, Vesiculæ, Pustulæ, Tuberculæ, Maculæ. We will now hear the author, for a moment, on his *Etiological classification* :

"The great family of diseases of the skin admits of division into two primary groups, namely :

1. Diseases affecting the General Structure ; and
2. Diseases affecting the Special Structure of the skin.

"The diseases affecting the general structure of the skin, or derma proper, are such as implicate at once all of the tissues which enter into its composition.

"The diseases affecting the special structure of the skin are those which select its separate components, such as the vessels, nerves, papillæ and pigment ; or its special organs, namely, the sodoriparous glands, sebiparous glands, hair follicles and hairs, and nail follicles and nails.

"The diseases affecting the general structure of the skin are divisible into five groups, namely :

- "I. Diseases affecting the General Structure.
1. Diseases arising from general causes.

2. Diseases arising from special external causes.
3. Diseases arising from special internal causes.
4. Diseases arising from the syphilitic poison.
5. Diseases from animal poison of unknown origin, and giving rise to eruptive fevers.

"The diseases affecting the special structure of the skin are divisible into eight groups, namely :

- “ II. Diseases affecting the Special Structure.
1. Diseases of the vascular structure.
2. Diseases of nervous structure.
3. Diseases of papillary structure.
4. Diseases of pigmentary structure.
5. Diseases of sordiparous organs.
6. Diseases of sebiparous organs.
7. Diseases of hair follicles and hair.
8. Diseases of nail follicles and nails.”

We have no space for a more detailed notice of the nomenclature of cutaneous diseases. We may say, however, that our author is philosophical, as much so as can be expected in the present state of our knowledge, in his selection of terms for varieties and sub-varieties.

The medication of the skin is a subject that addresses itself to both physician and surgeon. The treatment divides itself naturally into *constitutional* and *local*. The constitutional treatment is generally more efficient when combined with the local ; and, on the other hand, the local is often useless without remedies that impress to a greater or less extent the general system.

Cutaneous diseases rarely call for blood-letting, either by the lancet or leeches. In cases, however, characterized by high fever and much heat of surface, the loss of blood will prove beneficial. Saline purgatives, diaphoratics, diuretics, the compound extract of colocynth, blue pill, the liquor ammonia acetates, are the remedies that are most available. Syphilitic eruptions are moved very imperfectly with any thing indeed, until the poison is neutralized or eliminated from the system. The same remark is applicable to eruptions connected with other constitutional affections.

There is a very large number of cutaneous diseases that require nothing except local remedies. This class is larger too than might be supposed. The trouble in such is not in the blood ; nor does it consist in deranged secretions. It is in the cutaneous tissues alone.

We close here our notice of this volume; and in doing so we may say that its perusal impressed us with the belief that the author has given an impetus to the study of the skin diseases. Much, however, remains to be learned. We have a great many affections for which we have no remedy whatever—too many! too many! Nevertheless if others labor with the industry of our author, the number of these may be abridged.

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*Obstetrics—the Science and the Art.* By CHARLES D. MEIGS, M.D., lately Professor of Midwifery and the Diseases of Women and Children in Jefferson Medical College, Philadelphia; and one of the Physicians to the lying-in department of the Pennsylvania Hospital; member of the Society of Swedish Physicians, Stockholm; Corresponding member of the Hunterian Society, London, etc., etc., etc. Fourth Edition Revised, with one hundred and twenty-nine illustrations. Philadelphia: Blanchard & Lea, 1863.

In this edition (the fourth) the author states that he has endeavored to amend the work by changes in its form, by careful correction of many expressions, and by a few omissions and some additions as to the text.

It will be noticed that the article on Placenta Prævia has been re-written in this edition. The author was led to this for the purpose of noticing certain new modes of treatment which he regarded as ill-founded so far as the philosophy of obstetrical science is concerned.

The form of the work has been changed by dividing it into paragraphs or sections, numbered from 1 to 959. In this arrangement the author has had in view the convenience and welfare of the student.

Very few teachers have succeeded so well as Profosstor Meigs. He has always made his department in Jefferson Medical College very interesting. His didactic efforts have, for years, been spoken of as very superior. He knows how to arrange his matter so as to secure completely the attention of the student. His books have been severely criticised because written in a very familiar, and to many whimsical, kind of style. Still he teaches his subject, teaches it thoroughly and makes the labor of acquiring easy and agreeably to the student.

The volume before us embraces a very thorough review of obstetrics. The author's knowledge of the labor of others is very full. But, perhaps, the chief value of the work is that it contains what the author has, himself, seen during a long life of usefulness in a wide field.

Professor Meigs has now retired from teaching, having resigned his chair some two years since. This edition of his work is dated at Hamanassett, Delaware co., Pa., a place in the vicinity of Philadelphia, where he expects to spend, in quiet, the remnant of his days.

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## *Editorial and Miscellaneous.*

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*Qualifications of the Soldier.*—The War Department, it seems, has furnished to Examining Surgeons a catalogue of diseases the presence of any one of which exempts from military duty.

From the appearance of the catalogue it would seem to have been gotten up by an amateur, or some one, to say the least, having but little practical knowledge of disease.

The government wants sound men, men capable of undergoing the fatigues and privations of the soldier. In order to get such, the questions should not relate so much to the presence or absence of local affections, as to the general state of the body. What, for example, it might be inquired, is the condition of the bones? They should be large and well matured. What of the muscles? Have the habits been such as to harden the muscles? What is the state of the lungs? Endurance is impossible without strong lungs.

In trying to bring about the objects of the government, much more will depend upon the capabilities of the Surgeon than upon an arbitrary list of diseases he may be furnished with. The human body is so constituted that it requires a man of ability to look upon it and understand the nature and quality of the matter of which it is composed, and the movements of this matter.

Possessed of good physical powers, an individual, although laboring under some local disease, will be found to be more able for

the hardships of a campaign than one with a poor constitution and free from all kinds of disease.

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*Starling Medical College.*—The present session of this institution opens with a very fine prospect for a good class. The facilities now here, it may be remarked, for teaching are very clever. Students have access to the Penitentiary Hospital, County Infirmary Hospital, and to the Military Hospital on Broad street. Dissecting material is also abundant.

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*Vaccine Virus.*—We see it stated in the Cincinnati Lancet and Observer that Mr. Schmidt, 633 Main street, Cincinnati, keeps constantly on hand a supply of vaccine matter, put up in hermetically sealed glass tubes. Price, \$1.00.

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*Nashville University.*—The Medical Department of Nashville University is about to resume teaching which has been suspended for the last two years. This school, before the present troubles of the country, rivaled, in the number of its students, the largest schools of the country. During one term its students numbered over four hundred.

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*Surgeons in the Libey Prison.*—The following is a list of Union Surgeons confined in Libey Prison :

W. V. Houston, 122d Ohio, captured June 15th ; W. F. McCurdy, 87th Pennsylvania, June 15th ; Allston W. Whitney, 13th Mass., June 20th ; W. A. Rodgers, 3d Tennessee, June 19th ; Wm. Spencer, 73d Indiana, April 30th ; J. L. Morgan, 10th Mass., May 13th ; C. E. Goldsborough, 5th Maryland, June 15th ; H. L. Pierce, 5th Maryland, June 15th ; Lewis Applegate, 102d New York, July 2d ; T. C. Smith, 116th Ohio, June 15th ; A. A. Mann, 1st Rhode Island Cavalry, June 18th ; R. P. McCandless, Ohio, June 15th ; A. S. Looker, 5th Illinois Cavalry, May 20th ; C. T. Simpers, 6th Indiana, June 15th ; F. M. Patten, 12th Virginia, June 15th ; O. Nellis, 2d Virginia Cavalry, July 19th ; W. B.

Myers, United States steamship Georgia, May 14th; W. F. Bowler, 12th Pennsylvania Cavalry, June 15th; J. L. Brown, 116th Pennsylvania, June 15th; — Ketchum, 83d New York, June 20th; D. B. Wren, 75th Ohio, June 20th.

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*Ex-Surgeon General Hammond* is, we notice, traveling as a kind of Medical Inspector. He has been south as far as New Orleans, and is now about making a tour to the Cumberland. These movements of the Ex-Surgeon General may be very valuable to the service; but we can hardly imagine a visitor less acceptable to the medical men of the army. The Calomel and Tartar-Emetic edict is not yet forgotten, nor will it be very soon. The idea that of any one man should dictate to all of the Surgeons of the army what they were to use in the cure of disease! The Ex-Surgeon General is pretty clever. No one can read his book on Hygeine and deny this. Still he has a soft place on his pate or he never would have issued "Circular No. 6."

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*Syphilis*.—The poison producing this disease, Dr. Samuel W. Francis proposes calling *syphiline*. This is all well enough; but we would like rather better to hear of something to prevent the prevalence of the disease, for it is very much on the increase now. A disease so destructive in its effects certainly ought to receive a large amount of attention. For the more malignant form of the disease there is no earthly cure. The subject of it may make up his mind to have it hanging to his skirts as long as he lives. The disease, however, may, to a considerable extent, be prevented; and it is here that labor may be bestowed to best advantage.

We have no statistics of the prevalence of the disease in our country; but something may be suggested by the following:

"*Syphilis in the English Army*.—From the Army Statistical Reports it appears that the annual admissions into hospital from venereal diseases amount to 206 in every 1000 Cavalry soldiers, 250 in the same number of Foot Guards, and 277 in every 1000 Infantry of the Line. The average proportion for the Army at home is 267 per 1000, or more than one-fourth of the whole number. It is calculated that on the lowest average each man is

fifteen days under treatment. Thus 688 men out of the home force are always in hospital from this cause alone—a number equal, or nearly so, to the strength of a regiment on the home establishment; and the money loss to the State is calculated at nearly £14,500 a year. The further loss from subsequent disease and invaliding, and the injury to the State from the life-long deterioration of the individual and from the hereditary curses of transformed syphilis and scrofula conveyed to future generations, are beyond calculation. In India the case appears worse than in England. The proportion of venereal cases constantly in hospital is usually from 20 to 25 per cent. of the total sick. At some of the larger stations it much exceeds this. At Bangalore and Roorkee the proportion at the time the report was made was 50 per cent.; at Dinapore it was as high as 53 per cent.; and Dr. Maclean testified that a few years ago in the 1st Madras Fusiliers the amount of syphilis was equivalent to the withdrawal from duty of one-fourth of a company daily."—*Lancet*.

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*Correspondents.*—The public mind at the present is so occupied with the military enterprises of the country, that everything except practical matters, seems to be in a great measure neglected. We hope, however, soon to hear again from our old correspondents. Some of them, we know, are in the army, and have but little time to write; such should be "taking notes" which will be valuable hereafter.

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*Small-pox.*—This disease which has been epidemic in our city during the past summer has almost entirely disappeared. We treated quite a number of cases both in private practise and at the Pest-house near the city. We preserved notes of our cases and shall make a digest of them as soon as we can find the time.

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*The Number of Patients* in the U. S. General Hospitals at the present time is said to be 41,195.

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*Death of Dr. Geo. Hayward of Massachusetts.*—This event took place on the 7th ult., at the advanced age of 72.

*Close of the Fifteenth Volume of the Journal.*—This No. completes the 15th volume of the JOURNAL. Those who are in arrears should embrace the present auspicious time to close up their accounts.

All letters on business may hereafter be addressed to Dr. JNO. DAWSON.

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*On the Formation of Mucus and Pus.* By THOMAS K. CHAMBERS, M. D., Hon. Physician to H. R. H. the Prince of Wales, Physician to St. Mary's and the Lock Hospitals, &c.

In the vitalized forms which they present, we may consider pus and mucus as identical; the pus-globule being merely the descendant, more or less remote, of the mucus-globule, and both retaining only that low degree of life which they originally derived from the body. The physical differences between the two depend seemingly upon the medium in which these vitalized forms are suspended. Neither in pus nor mucus are the contents of this medium constant in their proportion to one another: no two analyses of pus or mucus are ever the same.

Indubitable pus and indubitable mucus may be clearly defined as the two ends of a scale, between which there are innumerable gradations. The most transparent, stringiest, and least globular mucus consists principally of a peculiar animal matter, which is not albumen, though it closely resembles it. It is not coagulable by heat, and it contains more oxygen on ultimate analysis than albumen does. Sulphur also appears not to be one of its constituents. Until it can be found reducible to be considered a compound of some known intermediate substances, it is temporarily called "mucin." This word simply means mucus divested of those contents which are capable of another nomenclature and physical separation—as, for instance, epithelium-scales, blood, the ammonia of decomposition, &c. The analyses are well known, being reprinted in every work of physiological chemistry, but shed little light, for the obvious reason that the substance analyzed is hardly ever twice the same.

Pus, on the other hand, contains a large quantity of albumen and a large quantity of fat. A modification in the mode of the loss of health is characterized by the presence of fibrin, and certain

forms of defective vitality by casein being found. The inorganic constituents of both seem to be the same as those of blood-serum with some of its water lost. Our diagnosis, then, of the morbid secretions of the mucous membranes should not be absolute—not that such and such a specimen *is* pus or *is* mucus—but comparative, that it is *more or less* purulent, according as it exhibits a greater or smaller quantity of albumen; a fact easily ascertained by the degrees of its coagulation by heat when diluted with water. And this is thoroughly practical and important, for it indicates the degree of loss of local vitality in the secreting membrane. Equally practical, also, and important is the observation of the presence of fibrin and its amount. In large and overwhelming quantities we are familiar with it as occurring in the most serious deficiency of life consistent with life at all which we find in mucous membranes; and there appears even in minor cases a close connection between its amount and the degree of deficient vitality or inflammation. During a severe cold in the head minute clots of spontaneously coagulating fibrin may be found in the secretion of the Schneiderian membrane, which, existing in large quantities, form the false membrane indicative of the serious poisoning of the system in diphtheria and croup.

The phenomena we see on the mucous membranes are a question of degree rather than essential difference.

Loss of vitality, as shown in mucous membranes, seems to be exhibited in the following degrees.

First, there is an *arrest of function*. For example, from the impression of cold the Scheiderian membrane is temporarily deprived of its endosmotic force; it ceases to absorb the water which is condensed on its surface from the breath, and that water drips from the nostrils. Or the stomach or intestines, from mental or physical causes, are deprived of their power of absorbing and digesting the fluid matters presented to them, and partially first excreted from them; and these fluids may pass away by diarrhoea. Or the skin is chilled, and shows its deficient vitality chiefly in the deficiency of its most prominent function; though it feels painfully, it cannot feel so delicately as it ought. In a vigorous person full life is soon regained; the nose recovers its natural degree of dryness; the intestines absorb again before the fluids have passed from the body, and the temporary indigestion does not arrive at diarrhoea; the skin recovers its feeling after a temporary painfulness. But

we know that our invalid patients, whose vitality is low, are not so easily reinstated. Catarrh of various parts quickly and readily follows the action of physical agents. It is probable that in this least degree of injury the capillaries are contracted in area, and consequently the rapidity of their stream increased, by the action of the nerves. This phenomenon is wanting if the injury is greater; in experiments upon animals the microscope does not detect it, if the reagent applied is powerful.

2. A greater degree of injury is accompanied by a loss of elasticity in the capillaries. Their dilatation, and the consequent retention and stagnation of the blood in them, is familiar to us all, in both the living and the dead subject, as "*inflammatory congestion*."

3. This stagnation may be in isolated spots complete; the blood-discs adhere together in rolls, as when removed from the body, and block up the passage. Thus the arterial wave is obstructed in its course, and like an ocean-swell shattered against a shore of rocks becomes more evident to the senses as the well-known "*throbbing*." It is shortened and sharpened, but there is no evidence that it is strengthened; indeed, the analogy I have cited, and the general fact of weakness being accompanied by quickened pulse, would seem to show that it is diminished in propelling force.

In the mean time there is an accumulation of that constituent of the blood which most resembles in appearance the element of young growing tissue—the colorless blood-corpuscles. The blood is dark, indeed, to the naked eye, but under the microscope is seen to be made dark by being filled with these pale bodies, possessing a high refractive power.

The loss of elasticity in the coats of the capillaries renders them more easily permeable by the contained fluid. Serum is poured out into the neighboring parenchyma, and joins with the swollen capillaries in producing "*swelling*." The loss of vitality in the blood-discs may be so complete that their haematin is dissolved in the serum, and we get the surrounding parts stained with it—as for a short time in typhus fever, and for a long time in syphilitic eruptions. Or the bloodvessels may completely lose their cohesion and be ruptured, allowing of haemorrhage. But in all this there is no new process, nothing which is not a direct deficiency of function.

In solid structures this effusion is followed by an endosmotic current of the watery part back again into the circulation, leaving behind it the more solid and coagulable constituents. On free surfaces,

covered only by soft open epithelium, the water and salts therein dissolved escape, forming the fluid of the mucus. The elements of new tissue, being there very copious to supply the constant demand for growth, ooze out copiously with the serum, and constitute the mucous globules. They are wasted elements of new growth, not themselves a new creation, or evidences of superadded life.

How do these matters get through the coats of the capillaries ? There cannot be holes for their escape, or the blood-discs, which are the smaller of the two, would always escape also. Doubtless this is one of the great riddles of physiology. But I think the art of drawing is in a certain degree responsible for some of the difficulty which it presents to our minds. When we have no means of correcting by our other senses impressions made on the eye, we are too apt to consider everything with an outline as equally solid. The necessarily hard outlines of the engraver express to us forms which may, for all we know, be spheres of cast iron, whereas in truth they are as delicate as aërial clouds. Why may they not pass through tissues, mutually dissolving and dissolved by the materials of those tissues ? Just as we see a stratum of fleecy cloud among mountains, or in Turner's pictures, disappear when it comes to a stratum of warm air, and reappear in the same form when it emerges on the other side. To get just ideas of nature, we must look upon solidity as a comparative, not as an absolute quality.

4. In a higher degree of deficient vitality the serum contains albumen and fat also exuded with it ; and this mixed with the multiplied globules constitute the fluid we call "pus." The albumen and fat not only escape on free surfaces, but saturate also the tissues they escape through, making them more retentive of water than would otherwise be the case. Inflamed cuticle takes a much longer time to dry than normal cuticle. Langhans found that a piece of healthy rabbit-skin was dry in three hours, but a piece of the same which had been inflamed during life took twenty hours to part with its moisture to the same extent. Thus it appears to be saturated with the nutriment which it has lost the power of employing aright.

5. Pus formed as I have described is a soft, greasy liniment, which tends probably to shield the parts with which it lies in contact from foreign influences, which in their condition of lowered vitality would be noxious to them. It is more bland and less liable to decomposition than any artificial application. Kept on the

healthy skin it causes less irritation than even water. But under certain circumstances it becomes what we term *ichorous*. In this state it is corrosive, poisonous, and destructive to the neighboring tissues. Now, this cannot arise simply by the chemical decomposition of the pus itself in consequence of retention, because in a good many cases (as in cancerum oris, for example) it has not been retained so long as usual, but is thrown off ichorous and irritating as it is formed. But you may observe that in all these instances of ichorous pus there is necrosis, mortification, ulceration, or some other form of actual loss of tissue. Tissue may be forming as in granulations, but it is being destroyed at the same time with abnormal rapidity. I cannot but think, therefore, that the ichorous nature of such pus may be due to its saturation with the organic acids which are the results of the decomposition, not of the pus itself, but of the melting tissues. Wash away this irritating pus, clean the sore, and that which is then formed often is quite bland and benignant. As pus differs from mucus, so ichor differs from pus in the nature of its accidental fluid constituents.

The formation of ichorous pus exhibits a further stage of loss of vitality. The poisonous part of it seems to be peculiarly soluble, and capable of uniting with, and destroying, animal tissues. Absorbed into the blood, it naturally destroys the vitality of the constituents of that fluid, causes it to coagulate in localized spots, and thus to give rise to the congestions and abscesses of pyæmia. When we reflect how easily ulcerations may arise in mucous membranes, and what an active surface they offer for absorption, we cannot be surprised at the frequency with which pyæmic abscesses follow slight injuries, such as operations on the bladder, crushing of calculi, typhus inflammation of the bowels—cases which seem of minor moment, but which certainly involve solutions of continuity, with consequent decomposition of tissue and the formation of ichor, in a situation very open to absorption.

6. The formation of fibrinous coats on mucous membranes I have already shown not necessarily to involve destruction of the epithelium. Is the loss of vitality which causes it to exosmose through the capillaries in the fibrin itself or in the walls of those vessels? Whichever it may be, such an exudation certainly is evidence of a great deficiency of life; and, moreover, by the mechanical impediment it throws in the way of the functions, usually leads to further deficiency.—*Lancet.*

[From American Medical Times.]

*Wounds of the Cavities, Viscera, and Brain.*

[Third letter of Dr. A. H. HOFF, Surgeon U. S. V., to Prof. MARCH of Brooklyn, N. Y.]

DEAR SIR: I have expressed to you very freely my ideas in reference to resections, support of fractures, etc., etc., and I shall devote this letter to wounds of the cavities, viscera, and brain. Wounds of the chest are not as common as one would suppose. It is a singular fact, that a vast majority of wounds are of the extremities. However, it has been my fortune to have had placed in my charge quite a number wounded in the chest, and most of these several days after receiving the injury. The history of these cases, so far, does not endorse the determined necessity of the peculiar treatment presented heretofore by many of our military surgeons. I find here, as well as everywhere, that we all are inclined to ride our hobby, some insisting upon one thing, and some upon another. But what has surprised me most, is the fact that in the midst of a multitude of opinions our patients recover with but little of our interference. I have not seen, so far, a single case of internal haemorrhage from a gunshot wound penetrating any of the cavities, supposing the reason to be that death invariably ensues within a short time after the wound is received. Those cases that have come under my notice, have, so far, simply required care as to *position*, and a moderate degree of treatment, having a tendency to compose the nervous system, and hold in check inflammatory action.

Hearing the air rushing out through an aperture in a man's back, and through another in front on the opposite side, at every expiration, would incline one to make a very unfavorable prognosis; but to have the same man shake you by the hand six months after, with his musket slung across his shoulder, well and hearty, would lead you to ask how can this be, and what has been done to accomplish it. On inquiry, you find that first one hole closed up; then, after a little, it produced no inconvenience to stop up the other. The expectoration, which was somewhat troublesome and streaked with blood, continued for two or three days; then more oppression was felt, some twinging pains, respiration after reaching a certain point was painful, but the patient could get along

without breathing so long ; it did not seem necessary to support life that a full inspiration must be taken, and it could not be done because it hurt ; felt better in a semi-recumbent position, but found lying on the side, "scoop fashion," did just as well, and enabled him to sleep and let all the matter run out ; had a first-rate appetite, but had to be careful not to fill his belly too full, as he could not breathe so well ; washing him off with cold water now and then, first along with a patch spread on his breast, kept cool, felt first-rate, made him breathe easier, and then, keeping perfectly quiet, not talking any, and having folks keep away from him, saved his life. "Did'nt take much doctor stuff ; a little stuff now and then to make him sleep, and once, he believed, a little physic to open him." I have outlined this conversation for the purpose of pleasantly demonstrating what made a man so severely wounded feel comfortable, gleaning from it the following indications : 1st, Keep the orifice open. 2d, Be particular as to position, consulting the patient's feelings carefully, as he is the best judge. 3d, Keep the chest cool. 4th, Give free exit to all discharge. 5th, Quiet all irritation by keeping the patient perfectly quiet, giving anodynes, but with great care ; be cautious about diet, more especially quantity, and meet with decision any untoward complication your watchfulness may discover. Don't think, because the wound is dreadful, the remedies must be dreadful with which you attack it.

On looking over what I have written, I feel inclined to think you will laugh at me, but you know my hobby is to add the sufferer's opinion to my own thinking, thereby better to get at the indications ; for he feels the pain, and I judge of the cause ; he knows when it is relieved, I find out the reason. Nature cures, I do the best to assist. Allow me here to make this remark ; on the battle-field it would be a troublesome matter to carry out the immediate treatment recommended for gunshot wounds of the chest accompanied with severe haemorrhage. I hope it will never be my fortune to receive one, as death would be my certain doom.

I find I have consumed all my time. The army is in front of Vicksburg ; what is to be done, I have not been informed ; but I am happy to say that the medical department out here is in first-rate condition ; everything in readiness, let come what will.

U. S. HOSPITAL STEAMER D. A. JANUARY,  
YOUNG'S POINT, LA., March 29, 1863.

*Ice in the Treatment of Diphtheria.*—The *Revue Thérapeutique* contains a paper by Dr. A. De Grand of Bologne, late French Vice Consul at Havanna, in which he mentions ice as an infallible remedy for diphtheria. As this, from its extreme simplicity, would, if so effective, be far superior to any yet tried, I cannot refrain from quoting the cases mentioned by the author, who first brought it into notice in February, 1860; and consequently complains, not without reason, of the inexcusable negligence of many practitioners in not adopting it, and thereby saving the valuable lives now annually lost by this disease. The following cases came under his observation after that date:

In March and April, 1861, diphtheria broke out in an epidemic form, chiefly attacking adults, and was of such virulence that in one week three young women died in a single house. One of Dr. De Grand's patients was seized with it, and as he could not immediately attend, and the case being a severe one, another physician was called in, who ordered emetics and aluminous gargles, which were of no effect. On the doctor's visit, he found the tonsils greatly swollen and a false membrane covering them. He immediately administered small pieces of ice, and by the following morning the tumefaction of the tonsils had diminished by half, and the false membrane had nearly disappeared. That very evening she was enabled to take food. A few days afterwards, her brother was seized with a similar sore throat, when, profiting by the example, he took ice and was rid of it in a few hours.

Dr. De Grand was summoned, in another case, to a young lady who had been laboring under the disease for two days, and was evidently sinking in spite of all previous treatment. The parents, relations, and friends of the family were immersed in the deepest sorrow. The doctor ordered ice, a general cry of astonishment was uttered by all present. Ice for sore throat! Impossible! It would be sheer murder! He, however maintained his ground; and after much expostulation, during which precious time was lost, he obtained his end. Before twenty-four hours the patient was in full convalescence.

Being at Vera Cruz on a mission, he was requested to see a young man who was attacked with malignant sore throat, and had been treated without effect by cauterizations with hydrochloric acid and astringent gargles. Here again he had to battle with the

prejudice of the family, but was at length allowed to administer ice. The young man recovered in the course of the following day. Dr. De Grand says, that although he has prescribed this remedy for the last twelve years, he has never yet met with a single failure after its adoption; he is evidently sincere in his opinion of its efficacy, and although it may not be as successful in other hands it certainly deserves a trial. Cold gargles have been recommended by Dr. Blane of Strasburg—Why not employ ice?

—[*Med. and Surg. Reporter.*

Dr. W. N. Cote,

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*Peritoneal Sections.*—In perusing the account of another formidable operation, the removal of a large abdominal tumor with attachments to the lumbar vertebrae, uterus, &c., performed by Dr. O'Reilly of New-York, one cannot but remark that, taking advantage of the æsthenic character of all diseases of the present age, step by step, are surgeons everywhere drifting as it were into the knowledge of the impunity with which the serous cavities of the human body may be assailed. And it cannot be long before some one of them, yet a little more venturesome, will prove that peritoneal section for obstructions of the bowels, gall duct, œsophagus, &c., may be performed with success; and that lives now so often sacrificed from them, may frequently by its means be preserved.

It is not long since it was our painful duty to make a couple of post mortem examinations for intus-susception, when we were led seriously to reflect that should other occasions arise, even a forlorn hope would tempt our prudent hands to cut into the abdominal cavity before death.

Nor can we pass over this case or those of Prof. Byford of Chicago, without noticing the constantly increasing evidence of the power of large doses of opium in controlling the after inflammation otherwise attendant on such operations. Two grains of solid opium at once—two grains more in half an hour, and two grains every three hours, or a grain every hour and a quarter all night long, with a quick pulse, continuing it for a week every three hours, is indeed heroic; but experience tells us that the life of the patient can thus be saved, and so we grow wiser by each success in this, another of the important legacies of Graves.

THERE has existed considerable doubt among physicians as to their liability under the Internal Revenue Law to a tax on their incomes. The Commissioner has made several decisions. The following extracts embrace the principal points:

"It is asked whether an assessment for Income Tax is to be made upon collections during the year 1862, for professional services rendered during that year and previous years, and whether an estimate of unrealized, or contingent income due for services rendered in that year ought to be included? I answer, that the assessment should be made upon all collections during the year 1862, without regard to whether the services were rendered during that or previous years. If any profits made during that year and uncollected, remain uncollected when they might have been readily realized, and with a view merely to avoid the assessment of the tax, they are to be considered as collected, and assessed accordingly; for no evasion of the liability of the tax-payer of his duty under the law should be allowed to profit him. But merely contingent profits, uncollected, the sum not ascertained, remaining open for adjustment, are not liable to assessment.

"2d. As to 'expenses necessarily incurred in carrying on any trade, business, or profession,' physicians cannot be allowed the wear and tear of horses, carriages and harness, any more than they can of their own constitutions, or of their health, necessarily injured in the practice of their vocation; but any incidental expenses, such as the feeding of horses, hire of servants, and such like, are to be deducted from their income.

"The amount expended by a physician for the keeping of a horse used exclusively in the business of his profession, is a legitimate deduction from his income."

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*Combination of Protiodide of Iron and Manna*—The protiodide of iron, in the form of pills, is very commonly employed in France, and the preparation generally contains the protiodide with a certain proportion of honey powdered liquorice, and powdered mallow. M. Fouchier recommends a kind of sugar-plum (*dragée*) composed of protiodide of iron, purified manna in tears, and powdered liquorice and mallow. By the union of these substances, M. Fouchier obtains a mass in which the combination of manna with the proti-

odide preserves the latter from any alteration, and it forms a true paste, which, when divided into pills or *dragées*, soften, by the heat of the hand. Each *dragée* broken into pieces presents internally the greenish color characteristic of the well-prepared and well-preserved potosalt of iron. In this preparation, therefore, there are two essential conditions observed—namely, the preservation of the salt without chemical alteration, and its easy solubility in the digestive passages. But M. Fouchier also believes that the manna, by its laxative operation and its stimulating the secretions of the digestive canal, but would also act both in facilitating the absorption of the drug and preventing the tendency to constipation which is one of the most troublesome effects of the ferruginous preparations.—*London Pharm. Jour.*, Sept., 1863.

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*The Ventilation of Ships.*—A plan of ventilation, invented and patented by Dr. Edmonds, Staff-Surgeon of the *Victory*, is to be tested in the turret-ship *Royal Sovereign*, at present in course of construction at Portsmouth. Dr. Edmonds's proposed system is self-acting, and it professes—

Not only to furnish an ample supply of pure fresh air to the crew, but also to effect the very important object of preserving the ship's timbers from decay or dry rot, by creating a constant circulation of air throughout the framework of the ship. This is effected by converting the timber spaces from the keel upward, between the "ribs," so to speak, of the ship, into draught channels leading into a tunnel shaft fore and aft on each side of the ship's berthing deck, which communicates by cross shaftings with the funnel, the draught of the funnel furnishing the motive power for the suction of a continuous current of air upwards through the ship's timbers, and carrying off the foul air and gasses from the ship's hold and bilges without tainting the air the crew breathe on the berth deck.—*Med. Times and Gazette*.

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*Cholera at Bombay.*—A sharp visitation of cholera in Bombay has carried off several Europeans, but the scourge has now disappeared.—*Lancet*.

*Gluten in Crust of Bread.*—M. Barral has presented to the Academy of Sciences some remarks of much interest concerning the crust of bread and the gluten contained in it. He had recently shown that, when equally dried, the crust of bread is more highly azotized than the crumb; and he also showed that the crust was more soluble than the crumb in water. M. Payen had, it is true, previously pointed out this greater solubility of the crust, and had ascribed it to the conversion of the starch into dextrine during the baking. But M. Barral's experiments show another important fact. "If," he says, "we exhaust with water an equal quantity of dry crust and dry crumb of bread, we find that the soluble portion of the crust consists of from seven to eight per cent. of nitrogen, whilst the soluble portion of the crumb contains only from two to three per cent. The greater solubility of the crust consequently, depends upon the transformation which its gluten has undergone under the direct action of the 200° to 220° heat of the oven. The soluble portion of the crust is more highly azotized than the juice of meat." M. Barral added that he was still engaged with his experiments, which would throw some new light on panification.—*Amer. Jour. Med. Sci. Oct. 1863.*

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*Vermillion Rock Salt Mine at Petite Anse, Louisiana.*—One of the facts of scientific interest brought to light by the Southern rebellion is the discovery of an important deposit of rock salt of remarkable purity in the island of Petite Anse, in Vermillion Bay, on the Gulf coast of Louisiana. By the kindness of Mr. Geo. D. Colburn, a large specimen of this salt has reached us. Its analysis by Dr. J. L. Riddell, of New Orleans, gives the following composition : Chloride of sodium 98.88, sulphate of lime 0.76, chloride of magnesium 0.23, chloride of calcium 0.13, = 100. This analysis, it will be seen, makes the Petite Anse salt almost pure.

Salt springs had been known on the island from an early period, but no suspicion existed of there being rock salt near the surface, until the late owner, Judge Avery, with the view to improve the flow of water from one of the saline springs, caused an excavation to be made, when, at the moderate depth of only fourteen or fifteen feet from the surface, the laborers struck the bed of white rock salt, which they at first imagined must be ice. It was at once recog-

nized, and proved of incalculable advantage to the Confederates, as well as a source of great wealth to the owner. The Island of Petite Anse (Little Elbow Island), so named from its shape, is a body of very fertile land, supporting rich crops of sugar cane and corn, besides forest trees, about  $2\frac{1}{2}$  miles long by  $1\frac{1}{2}$  wide and containing about 2100 acres. It rises 170 feet above tide in the midst of a wide spreading marine swamp. The soil of the island is anumber-colored argillaceous sandy loam, capable of forming good bricks.

The salt is covered by a whitish, cream-colored solid smooth rock, at an average depth of about  $19\frac{1}{2}$  feet below the surface or  $4\frac{1}{2}$  feet below tide water. There is no moisture or brine in the deposit, the salt being compact, hard and perfectly dry. Our intelligent correspondent is not a geologist, nor does he send us any fossils with the salt. But the deposit is undoubtedly of the Tertiary age.—*Am. Jour. Sci. and Arts*, Sept. 1863.

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*The Wax Tree of Japan.*—“On this remarkable plant, the *Rhus succedanea* of botanists, the ‘Bulletin de la Société d’Acclimatation’ publishes an interesting paper by Eugéne Simon, now at Nagasaki. The vegetable wax of Japan is one of the chief articles which that country exports. It is not exactly of the same nature as common wax, since it melts in summer at the common temperature; but this inconvenience is obviated in Japan by protecting the candles made with this wax by a coating of beeswax. It appears that in England a process has been discovered for increasing its consistency, since the demand for the article from that quarter has considerably increased of late. The tree itself might be easily acclimatized in the southern parts of France. It thrives on mountains and on stony and barren ground, unfit for other agricultural purposes. M. Simon has sent over about twenty kilogrammes of its seed for trial. The young trees are planted in Japan along the highways, when they are two years old, leaving a distance of about three feet between the stems; but if planted in squares, the distance must be double. The trees are kept low by lopping, and trimmed in the shape of pyramids. In the fifth year after planting, each tree yields on an average 4lb. of seeds; in the eighth year, 6lb.; in the 10th, 18lb.; in the 12th, 40lb.; in the 15th, 60lb.; in the 18th year the tree enters upon its decline; 400lb. of

seed yield 100lb. of wax. At present 200lb. of this wax are sold in London at the price of £5; so that a plantation of 10,000 trees in their prime may produce £4,000. The seed is gathered toward the end of autumn, threshed, and then left to dry for a fortnight, after which it is slightly roasted. It is next crushed under a mill-stone, and the produce exposed to the heat of steam in canvas bags; the wax is then obtained by the action of a screw press. This wax is of the third or lowest quality: to bleach it, it is rasped and rinsed in water, and then exposed to the action of the sun and dew for three days. A still higher quality is obtained by repeating this operation."—*Lond. Pharm. Jour.* Sept. 1863, from *The Times*.

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DRUNKENNESS in England has gradually risen into a most formidable social vice, as appears from the following statement in the *Lancet*.

"By a Parliamentary paper lately issued, it appears that in the year ending Michaelmas, 1861, there were 54,123 persons, male and female, convicted of drunkenness in England and Wales; but in the year ending Michaelmas, 1862, the number convicted reached the high amount of 63,250, whilst not less than 100,000 were proceeded against before justices of the peace for being in a state of inebriety. Thus the disheartening increase of more than 9000 intoxicated persons was proved to have occurred last year! The proportion of drunkards convicted to those taken up did not alter, being in each year about 66 per cent. of those charged with this offense to our national character."

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*Tannin in Conjunctivitis and Strumous Ophthalmia.*—Dr. G. R. Sherarton finds a solution of tannin more successful than any other application in these troublesome eye afflictions. He adds from one to two drams to each ounce of water, and directs it to be dropped into the eyes several times a day. It causes much smarting and lachrymation, but this is soon succeeded by a feeling of comfort, and freedom from irritation. In cases of phlyctenular ophthalmia, or ulcers of the cornea, he conjoins atropine or ext. belladonna with it, and likewise preparations of opium when required.

*Treatment of Chaps and Chilblains.*—The *Bulletin Médicale du Nord de la France* registers the following formula, which M. Testelin has found useful in cases of chilblains uncomplicated by ulceration: Tincture of iodine, 3ij.; chlorinated solution of soda, 3vj. This liniment should be laid over the seat of the disease, and afterwards dried by exposure to the fire. M. Testelin states that the remedy effects a cure in three or four days. For the treatment of chapped hands the same practitioner has frequently resorted to the application of honey heated in an oven, and deprived of its viscosity by the removal of the froth formed under the influence of heat. It should be applied over the hands whenever they are washed, and spread with gentle friction. The author asserts that he has succeeded in curing chaps, and in preventing their return, in servant maids whose hands are frequently exposed to the contact of water, and who usually suffered from this inconvenient affection throughout the winter. He prescribed the same remedy with entire success in Brussels to a clear-starcher, although this person did not for a single day discontinue her employment.—*British Med. Jour.*. June 6, 1863.

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*Obscene Circulars.*—Rascality seems to have manifested curious ingenuity in furtherance of the schemes of a so-termed American medical practitioner, who, calling himself a doctor, lives where those whom he addresses do congregate. A yellow bill, setting forth in most unmistakable terms that which he proposes to treat, has attached to it a small slip of adhesive paper, which enables it to be fastened to the backs of private carriages standing in the streets. This bill, printed in true sensation style, is headed “No cure, no pay,” and appropriately, on the part of the alleged American physician, announces his overtures to the public.—*Lancet*.

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*New Reaction for Veratria.*—Trapp, of St. Petersburg, has observed that the smallest traces of veratria dissolved in cold concentrated chlorhydric acid, giving a colorless solution, which, on continued boiling, assumes a red color that finally becomes very intense, and resembles that of permanganate of potash. The solution remains unaltered by standing for a long time.—*Am. Jour. Sci. and Arts, from Polytechnisches Notizblatt*, 1863, 96.

*On Impregnation.*—Dr. F. J. W. Packham, in a letter to the London *Lancet* says, that conception occurring in women during the first half of the time between the menstrual periods, produces female offspring, and male in the latter half: that he has long been in the habit of informing those who are out in their reckoning of the time of their parturition, that the error has probably arisen “from an idle boy,” and that he rarely fails in being right. He concludes by saying that all animals are governed by the same law—and that control through this knowledge could, if desired, be exercised over the gender of their offspring.

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COLUMBUS, OHIO.

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Mr. KLOTT, who has been for a long time in the employment of Geo. Tieman, of New York, has opened a new establishment for the manufacture and sale of all kinds of Surgical and Dental Instruments of the finest quality, which he proposes to sell on the most reasonable terms.

He keeps constantly on hand a great variety of instruments, which he invites physicians, surgeons and dentists to call and examine before purchasing elsewhere. He hopes, and is determined to furnish the western profession with as good a quality of instruments as can be found in our largest cities.

*Orders from abroad promptly attended to.*

From an acquaintance with Mr. Klott, and an examination of his instruments, I feel fully justified, and indeed I take pleasure, in recommending them in the highest terms. I have had ample opportunities to test the instruments of many of the most celebrated manufacturers of the world, and I have no hesitation in saying that for beauty of finish and fineness of steel and temper, they are not excelled by any I have ever seen. They are equal to Tieman's or Schively's best.

J. DAWSON.

jan. '62.







